Department of Energy
Washington, DC 20585

December 22, 1997

MEMORANDUM FOR **HEADQUARTERS PRINCIPAL BUDGET CONTACTS**

FROM: **LYNWOOD H. HENDERSON, DIRECTOR /s/ OFFICE OF BUDGET**

SUBJECT: **FY 1999 Congressional Chapter of The DOE Budget Formulation Handbook**

Attached is the most current version of the Congressional Chapter of the Department's Budget Formulation Handbook. Guidance contained in this chapter has been updated to reflect the most current guidance from appropriation subcommittee staff and OMB A-11 submission requirements for preparation of FY 1999 Congressional budget materials. A summary of changes is provided to assist you in determining changes to this year's submission requirements. Additional guidance will be issued through the upcoming FY 1999 Congressional Budget Call. The Congressional Budget Chapter is available on the DOE CFO Homepage in WordPerfect 6.1 and Acrobat PDF formats at http://www.cfo.doe.gov/budget.

We welcome any comments, suggestions or ideas you may have to make this a more useful document. Please direct any comments or questions you may have to Roy Craig on 202 586-3455.

Attachments

Department of Energy
Washington, DC 20585

December 22, 1997

MEMORANDUM FOR **HEADQUARTERS PRINCIPAL BUDGET CONTACTS**

FROM: **LYNWOOD H. HENDERSON, DIRECTOR /s/ OFFICE OF BUDGET**

SUBJECT: **FY 1999 Congressional Chapter of The DOE Budget Formulation Handbook**

Attached is the most current version of the Congressional Chapter of the Department's Budget Formulation Handbook. Guidance contained in this chapter has been updated to reflect the most current guidance from appropriation subcommittee staff and OMB A-11 submission requirements for preparation of FY 1999 Congressional budget materials. A summary of changes is provided to assist you in determining changes to this year's submission requirements. Additional guidance will be issued through the upcoming FY 1999 Congressional Budget Call. The Congressional Budget Chapter is available on the DOE CFO Homepage in WordPerfect 6.1 and Acrobat PDF formats at http://www.cfo.doe.gov/budget.

We welcome any comments, suggestions or ideas you may have to make this a more useful document. Please direct any comments or questions you may have to Roy Craig on 202 586-3455.

Attachments

Department of Energy

Washington, DC 20585

December 22, 1997

MEMORANDUM FOR **HEADQUARTERS PRINCIPAL BUDGET CONTACTS**

FROM: **LYNWOOD H. HENDERSON, DIRECTOR /s/ OFFICE OF BUDGET**

SUBJECT: **FY 1999 Congressional Chapter of The DOE Budget Formulation Handbook**

Attached is the most current version of the Congressional Chapter of the Department's Budget Formulation Handbook. Guidance contained in this chapter has been updated to reflect the most current guidance from appropriation subcommittee staff and OMB A-11 submission requirements for preparation of FY 1999 Congressional budget materials. A summary of changes is provided to assist you in determining changes to this year's submission requirements. Additional guidance will be issued through the upcoming FY 1999 Congressional Budget Call. The Congressional Budget Chapter is available on the DOE CFO Homepage in WordPerfect 6.1 and Acrobat PDF formats at http://www.cfo.doe.gov/budget.

We welcome any comments, suggestions or ideas you may have to make this a more useful document. Please direct any comments or questions you may have to Roy Craig on 202 586-3455.

Attachments

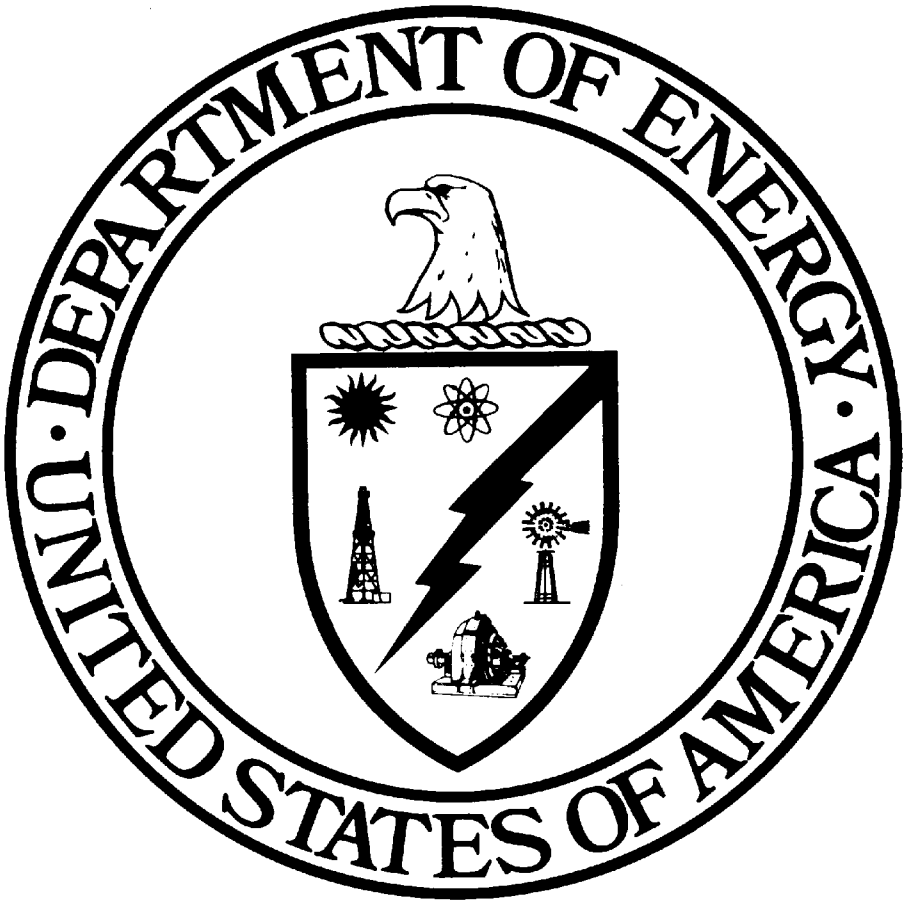
DOE Budget Formulation Handbook
Chapter IV - Congressional Budget Process

Summary of Changes
(Revised December 1997)

Page No.	
IV-1.6	For consistency in preparation of this year's electronic budgets to Congress, all budget material will be submitted in a **New Times Roman 12 point font size.**
IV-3.1	**Capital Asset Funding.** The Department will support the Administration's policy to fully fund capital assets by using incremental budget authority for the budget year plus advanced appropirations to fully fund outyear construction project requirements.
IV-3.56 & 57	**Program Direction- Support Services.** The FY 1998 House EWD report language (H.R. 105-90) requires that all support services contracts be budgeted for in the Program Direction account regardless of whether they fund a program mission line or are for the benefit of a Federal FTE.
IV-3.55	**Program Direction - Salaries and Benefits.** The annual $80 per person payment to the civil service retirement fund for currently employed CSRS and FERS personnel required by the Federal Workforce Restructing Act of 1997 are no longer required in FY 1999.
IV-3.61	**Program Direction - Funding Table.** This change deletes Headquarters Working Capital Fund as a separate stub on the Funding Table and correctly includes it in the total funding for Other Related Expenses on the Funding Table.
IV-3.66, 67 & 68	**Bridge Cost.** At the direction of OMB, the term "Bridge Costs" is no longer used on the Capital Operating Expense and Construction Summary. **"Other Project-Related Costs"** (Operating Expense Funded) will replace bridge costs. Change does not affect the reporting requirement.
IV-3.71	**Project Data Sheets** will be required for construction projects which exceed the dollar threshold of $5,000,000. This change is due to the FY 1998 Defense Authorization Act increase in the General Plant Project limitation from $2,000,000 to $5,000,000. The Department is also raising the limit on Accelerator Improvement Projects (AIPs) from $2,000,000 to $5,000,000. Major Items of Equipment (MIEs) will remain at $2,000,000.

IV-3.77	**Project Data Sheets.** OMB has changed its approach regarding the full funding of fixed assets. This year OMB has directed that capital projects are fully funded by using incremental budget authority for the budget year plus advance appropriations for the outyears necessary to fully fund current and proposed construction projects. Obligations in the budget year and outyears shall equal the amount of appropriations that would have been requested if the incremental funding policy were still in place. The request for advance appropriations must be written in the appropriation language which funds the project.
IV-3.97	**Project Data Sheet Format.** Programs are required to use the format provided for the FY 1999 OMB Budget.
IV-4.17	**Consultant Services (Old Paragraph g)** is no longer required by OMB A-11, old section 15.10.
IV-5.2	**EE and ER Solar and Renewable Programs Crosscut.** The FY 1998 House Report on Energy and Water Development directed the Department to submit a comprehensive research and development request for FY 1999 which represents a new partnership between the Office of Energy Efficiency and Renewable Energy and the Office of Energy Research. To comply, EE and ER will submit a table which integrates the budget requests for the EE and ER organizations.

DEPARTMENT OF ENERGY



BUDGET FORMULATION HANDBOOK
CHAPTER IV,
CONGRESSIONAL BUDGET PROCESS

OFFICE OF CHIEF FINANCIAL OFFICER

U.S. DEPARTMENT OF ENERGY
BUDGET FORMULATION HANDBOOK
CONGRESSIONAL BUDGET REQUEST CHAPTER

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont'd)

POINT OF CONTACT MATRIX. Provided below are the names and telephone extensions of contacts who can provide assistance for each of the listed submission items.

CONGRESSIONAL BUDGET SUBMISSION REQUIREMENTS	POINT OF CONTACT	
	NAME	PHONE
Primary Justification:		
Appropriation Language	Barbara Fairington	6-3453
Executive Budget Summary	Roy Craig	6-3455
Program Mission	Roy Craig	6-3455
Program Funding Profile	Roy Craig	6-3455
Program Funding by Site	Roy Craig	6-3455
Summary of Changes (Interior Programs only)	Roy Craig	6-3455
Program Performance Summary	Roy Craig	6-3455
Program Direction (EWD Programs only)	Roy Craig	6-3455
Capital Operating Expenses & Construction Summary	Roy Craig	6-3455
Comparability Matrix	Roy Craig	6-3455
Project Data Sheets - Construction Project Number	Roy Craig- Tom Knight	3-2330 6-4016
Supplementary Requirements:		
Special PMA Exhibits	Andy Gray	6-4511
EIA Support Cost Estimates	Karen Elwell	6-2867
Facilities Summary (Interior Program only)	Robert Pafe	6-4026
Economic Regulatory Admin. Summary	Joann Luczak	6-6985
Natural Gas Program	Sandra Whaisley	6-5600
Program Funding by Contractor & Location	Steve Baker	3-4795
Estimates of Proprietary Receipts	David Waters	6-6998

POINT OF CONTACT MATRIX (Cont'd)

CONGRESSIONAL BUDGET SUBMISSION REQUIREMENTS	POINT OF CONTACT	
	NAME	PHONE
Supplementary Requirements (Cont):		
Staffing Guidance and Requirements	Tom Wheeler/ Jackie Fennell	6-3276/ 6-6818
Technology Transfer	Mike Saltzman	3-2253
Small Business Innovation Research	Beverly Kipe	3-2254
Historically Black Colleges	Annie Whatley	6-0281
Administrative Support Costs	Jon Rigby	6-8720
Crosscuts Requirements:		
Environment, Safety & Health	Ray Blowitski	3-9878
Safeguards and Security	Alice King or Karen Stewart	3-8782 3-9934
Information Management	Charles Guyker	3-4706
EE and ER Solar and Renewable Programs	Andy Gray	6-4511
Ancillary Documents:		
Summary of Estimates by Appropriations	David Waters	6-6998
Summary of Estimates by Major Activity	David Waters	6-6998
Control and Statistical Tables	David Waters	6-6998
Outlay Table	David Waters	6-6998
Base Table	Paul Kelly	3-5325
Budget History Table	Dave Waters	6-6998
State Table	Steve Baker	3-4795
Laboratory Table	Steve Baker	3-4795

CHAPTER IV

CONGRESSIONAL BUDGET REQUEST

1. INTRODUCTION.

   a. Overview. The purpose of this chapter is to outline and describe the requirements and procedures for the preparation and submission of the Department of Energy (DOE) budget for the Congressional Budget Review. Additional guidance on the Congressional process (i.e., roles and responsibilities, funding responsibilities, DOE policy, etc.) is provided in DOE Order 130.1, BUDGET FORMULATION PROCESS.

   b. Background. The Congressional budget request culminates the budget formulation cycle which began in early January with the issuance of the Field Budget Call providing guidance on the preparation of the Field budgets. Typically, the Congressional budget process begins in December after receipt of initial OMB allowances on the Department's budget request and before the OMB and Presidential appeal process. The President's Budget is required by law to be submitted to Congress no later than the first Monday in February. Congressional review of the budget consists of several distinct phases in which the Department is involved to varying degrees. The activities in which DOE is involved include:

      (1) **Briefing of Congressional Staff and the Press**. The preview of the budget consists of the Congressional staff briefing, the press briefing, and the preparation of two preview documents.

         (a) **Congressional Budget Briefings**. The staffs of the House and Senate on Energy and Water, and Interior and Related Agencies Subcommittees receive briefings by the Chief Financial Officer the day the budget is submitted to Congress. The staffs of the authorization committees with jurisdiction and oversight of the Department's programs are also briefed that day.

         (b) **Press Briefing**. This briefing is usually held the same day the President's budget is transmitted to Congress. The presentation is given by the Secretary of Energy, accompanied by the Chief Financial Officer. The materials and press packages for this briefing are developed from the Congressional budget request.

         (c) **Preview Documents**. There are two basic documents developed for use at the press and Congressional briefings. Each of these documents is printed

in sufficient quantities to allow limited distribution to the Congress, press, and public.

1 *Budget Highlights* are jointly prepared by the Office of Policy and the Office of Budget. The Highlights provide a capsulized presentation of the DOE budget.

2 *Annual Report* is prepared by the Office of Policy and highlights DOE past year accomplishments and near-term plans.

(2) **Preparing and Transmitting Detailed Budget Justifications**. The detailed congressional justification documents are developed based on the needs of subcommittee staff and consists of several budget volumes which are transmitted to Congress concurrently with the President's budget. Individual program briefings on the budget are then arranged for the staff of the appropriations subcommittees by the External Coordination Staff in the Budget Office and for the various authorization committee staffs by the Assistant Secretary for Congressional and Intergovernmental Affairs. The majority of the guidance provided in this chapter addresses this step in the Congressional budget process.

(3) **Congressional Hearings**. In late February or early March the House Energy and Water Development and Interior and Related Agencies Appropriations Subcommittees begin their review of the Department's budget request by conducting formal hearings. The Secretary of Energy and DOE program officials testify before the members of the subcommittees and submit statements for the record. The transcript of the proceedings along with the statement and questions and answers prepared by the programs from the hearing are published by the House Appropriations Committee as the official hearing record.

(4) **Mark-up of Appropriations Bills and Reports**. After May 15 of any given year or as soon as Congress approves a budget resolution for the budget fiscal year, and the official hearing record of the subcommittee is published, the House Appropriations Committee may begin consideration of legislation. The subcommittees mark up the bill and accompanying report, then the full Appropriations Committee considers the legislation for adoption. After the Full Committee introduces the bill and report in the House of Representatives, the legislation is sent to the floor for action. Upon passage by the House, the Senate then proceeds through a process similar to that of the House.

(5) **Conference Committee and Enactment of the Bill**. Differences between the House and Senate measures are resolved through a conference between members of both subcommittees. The report of the conference and accompanying statement of the managers is subject to approval by both the House and the

Senate. The bill is then sent to the White House where the President has ten days to sign the bill into law or the bill becomes law without his signature. Should the President veto the bill the Congress must reconsider the legislation beginning in the House.

c. Key Concepts.

(1) **Presentation of the Budget**. As a rule, the justification materials are provided in the manner best suited to the respective committees. In this regard, the Department's budget is governed primarily by the needs of the House and Senate appropriation subcommittees on Energy and Water Development and Interior and Related Agencies. While the subcommittees' needs may vary slightly from year to year, the basic requirements are consistent and lend themselves to standardization of format. Detailed instructions for the preparation of justification materials, to the extent they are standardized, are provided in paragraphs 3 through 6 of this chapter. Minor changes requested by the subcommittees will be discussed in the annual Congressional Call issued by the Office of Budget.

(2) **Funding Level**. Since the Congressional budget process begins well before final Presidential decisions are reached on the budget, it must be assumed that all appeals of the initial OMB allowances will be unsuccessful. These allowances will be used as the basic framework of the Congressional justification. As these allowances change during the OMB and Presidential appeal process, the justifications will be modified accordingly.

(3) **Controls - Dollars and FTEs**. All dollar amounts and staffing levels shown in Congressional budget materials must agree with final OMB/Presidential budget decisions.

(a) **Dollars**. The Office of Budget will issue a Control Table which reflects these determinations in both comparable and non-comparable structures as soon as the final OMB/Presidential allowances are received. All budget material must tie to these amounts; any budget materials inconsistent with these amounts will be returned immediately for correction. Programs with questions or problems with the Control Table should immediately notify the Budget Formulation Team (CR-13). For a detailed description of a Control Table see paragraph IV.6.c.

(b) **FTEs**. The Staffing Management Branch (HR-61) will issue a staffing table showing final staffing allowances. Programs with questions or problems with staffing level control numbers should immediately notify

HR-61. Detailed staffing guidance and reporting requirements are provided in paragraph IV-.4.h.

(4) **Economic Assumptions**. Budget estimates should reflect the appropriate economic assumptions. These assumptions, i.e., escalation rates for operating expenses, pay and related benefits and construction projects will be provided in the annual Congressional Budget Call.

(5) **Moratorium on Budget Structure Changes**. This Chapter continues the moratorium on program budget structure changes. Senate and House Energy and Water Development Appropriation subcommittee staff have expressed dissatisfaction with programs that annually change their portion of the Department's budget structure. Subcommittee staff have directed the Department to submit its budget in the current structure on a non-comparable basis. Staff indicated that, under some very limited circumstances, it may be necessary to make some adjustments. Such adjustments will only be permitted if submitted by the DOE Office of Budget and approved by the subcommittee staff in advance. For those rare exceptions where structure changes are approved, organizations must prepare and submit a comparability matrix to crosswalk and clarify the changes.

(6) **National Defense Activities Two-Year Budget**. For even numbered budget years, all DOE National Security (053) organizational elements need to submit a two-year Congressional budget. Currently no other DOE programs are required to develop or submit biennial budgets. Program activities funded from the National Defense Budget Function (050) will append data for FY BY+1 in brackets (i.e., FYBY/[FY BY+1] for column headings and $xx,xxx [$zz,zzz] for dollar amounts). Questions concerning biennial Defense budgets should be directed to the Defense Team (CR-14) of the Budget Analysis Division, Office of Budget.

(7) **Submission Requirements**. The due date and required number of copies of the draft and final Congressional budget submissions will be specified in the Call letter. Electronic transmission requirements will also be specified in the Call guidance.

(8) **Typing Guidelines**. The formats and typing instructions for preparing and submitting Congressional budget materials are provided in Figure IV-1c. Since there are more than 25 separate program organizations within DOE that prepare budget submissions, it is imperative that this guidance is strictly followed to ensure uniform budget requests.

DEPARTMENT OF ENERGY
FY 19BY CONGRESSIONAL BUDGET

TYPING GUIDELINES

To ensure consistency, all primary budget justifications should be submitted on 8 1/2 x 11 inch paper with information typed
* horizontally on the page (landscape). All material will be typed using a **Times New Roman 12 point fontsize**. Questions concerning typing should be directed to the Office of Budget, Budget Formulation Team, 586-4016.

Printing the budget on 8 1/2 x 11 inch paper requires that material be presented within prescribed margins. The minimum margins for 8 1/2 x 11 inch paper are 1/2 inch sides, 3/4 inch top and 1 inch bottom margin. Material that exceeds these margin allowances will be returned for correction. Remember, correcting one page could involve re-doing succeeding pages.

Quality copy material must be submitted, preferably clear originals, for reproduction. **Page numbers will be added by the Office of Budget prior to reproduction, therefore, organizations should not type page numbers on their material**. Organizations should put their material in the appropriate order for copying and then in pencil consecutively number the pages on the reverse side.

Figure IV-1c
Typing Guidance

2. JUSTIFICATION DOCUMENTS

a. The Department's justification materials are provided in a manner best suited to meet the needs of the respective appropriation subcommittees. While most of these materials remain static from year to year, some minor changes may take place as the committees alter their requirements. These revised requirements are identified during meetings held between DOE Office of Budget and appropriation's committee staff. Where changes identified at these meetings are of a continuing nature, revisions will be made to the appropriate chapters in the Budget Formulation Handbook. One-time only or short-term changes will be reflected in the annual Congressional Budget Call.

b. There are four types/groupings of justification documents:

(1) **Primary Justification Materials**. These documents are the detailed justifications that support the Department's request for funding. This material constitutes the pages that are consolidated into the Department's Congressional Budget Request volumes. In addition, the Department submits a classified addendum of primary justification materials for the National Security related programs.

(2) **Supplemental Justification Materials**. These are additional and back-up data that are prepared at the specific request of the two cognizant subcommittees. This chapter only describes the supplemental materials that are prepared on a recurring basis.

(3) **Crosscut Documents**. These are analyses that are prepared to consolidate related functions that are funded within the Department in several different organizations.

(4) **Ancillary Documents**. In addition to the above mentioned justification materials, the Congressional committees require that the Department provide several tables summarizing DOE’s budget by various elements (i.e., level of detail, location, Contractor, etc.).

3. PRIMARY JUSTIFICATIONS. This section provides guidance and sample formats to be followed in the preparation of primary budget justification materials that will be included in the Department's FYBY Congressional budget request.

* OMB has changed its approach regarding the full funding of fixed assets. This year OMB
* has directed that capital projects be fully funded by using incremental budget authority for
* the budget year plus advance appropriations for the outyears necessary to fully fund current
* and proposed construction projects. Obligations in the budget year and outyears shall equal
* the amount of appropriations that would have been requested if the incremental funding
* policy were still in place. The request for advance appropriations must be written in the
* appropriation language which funds the project.

a. Appropriation Language. Headquarters Organizations should submit proposed appropriation language as part of the detailed justification material for the Congressional budget. Proposals should be reflected as changes to the base language. Base language is the current year (FYCY) appropriation legislation, if enacted, otherwise it is the language proposed in the Appendix of the President's FYCY budget.

(1) Proposed appropriation language must be consistent with the final budget guidance. OMB has final approval of the appropriation language that will be printed in the FYBY President's Budget Appendix and Congressional budget volumes.

(2) Changes to the base appropriation language in the budget year (FYBY) should be indicated by brackets ([ ]) in the case of deletions, or underscores (_) in the case of additions.

(3) Substantive changes (other than appropriated dollar amounts) **must** be footnoted and fully explained on the same page as the language. Statements should describe what the proposed change will accomplish and why it is necessary. For example, if the changes are driven by legislation or Presidential initiatives, these drivers should be cited. Explanations are required for language deleted as well as added.

(4) An example of a proposed appropriation language submission is shown in Figure IV-3a.

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
ATOMIC ENERGY DEFENSE ACTIVITIES
WEAPONS ACTIVITIES

Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction and acquisition of plant and capital equipment and other incidental expenses necessary for atomic energy defense weapons activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101, et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion; and the purchase of passenger motor vehicles (not to exceed [79, of which 76 are] 94 for replacement only), [including one police-type vehicle, $3,460,314,000] $3,710,000,000 to remain available until expended.

EXPLANATION OF CHANGE

Changes in appropriation language relate only to the number of vehicles to be acquired

Figure IV-3a
Appropriation Language

b. Executive Budget Summary. House Report 104-149 of June 20, 1995, accompanying the FY 1996 Energy and Water Development Appropriations Bill states, "Program budget justifications consistently fail to place activities in the context of how they achieve major program goals and objectives, and how they relate to other Departmental program objectives and activities. Each Assistant Secretary and program director is responsible for preparation of the budget documents submitted to Congress. Attention should be given to making the best possible case for programs in the initial budget submission rather than waiting until preparation of testimony for Congressional budget hearings is required before trying to articulate a cohesive program strategy."

To address the Committee's concerns, every major program organization is required to develop and submit an Executive Budget Summary along with their primary budget materials. This summary document should integrate key budget information contained in each of the major program element mission statements to present a comprehensive strategy. This means that **all** budget activities funded under various programs in different appropriation accounts (and, in the case of EE, different appropriations subcommittees) must be tied together to support the organization's major goals and objectives. While organizations are being given flexibility in the presentation of this information, it must cover the following areas:

- Organization's major goals and objectives, including Presidential and crosscutting initiatives.
- Program composition/major elements (crossing multiple programs, appropriations and subcommittees, as applicable).
- Comprehensive strategy for achieving stated goals and objectives, including associated milestones and a baseline beginning in FY96.
- Major drivers such as legal requirements, Executive Orders, Presidential initiatives, etc.
- Federal staffing and associated funding requirements.
- Contractor Employment by major program activity and site.
- Several key program performance measures that provides that provide the linkage bewteen support DOE's Strategic Plan Annual Performance Plan, and the budget request.
- Major program changes from the FYCY to the FYBY.
- Graphic displays of funding trends and comparisons associated with sub-programs, FTEs (HQ & field splits), sites etc. Pictures should not be used if copies are not clear.
- Major issues, concerns, sensitivities, if applicable, including affected stakeholders, geographic locations.

The narrative portion of the Executive Budget Summary should be approximately four to five pages in length and signed by the cognizant Assistant Secretary or Program Office Director. Programs are to include tables, charts or graphs, especially those that Subcommittee members found particularly useful during last year's Congressional testimony. Programs are reminded to describe tabular dollars in thousands and

narrative dollars in whole dollars. It is intended that the Executive Budget Summary be used by Assistant Secretaries and Program Office Directors during their Congressional hearings. A sample format is shown in Figure IV-3b.

Sample Format

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
PROGRAM ORGANIZATION

EXECUTIVE BUDGET SUMMARY

Mission
Describe the organization's mission and how it supports the Department's Strategic Plan. What are its major goals and objectives, including Presidential and crosscutting initiatives. Integrate the goals and objectives of all major programs funded by the organization. This includes major programs funded under different appropriation accounts (and, in the case of EE, different appropriations subcommittees). Also, state if there are any legal requirements or Executive Orders associated with the organization's mission?

Strategy
What is the strategy for accomplishing the mission? What are the major program elements and crossing-cutting programs supported by the organization that contribute to accomplishing the stated mission? Provide tables and/or charts that display the organization's funding for FYPY through FYBY by major program, appropriation account, and subcommittee, as applicable. Also, provide a table that reflects FYPY through FYBY funding, by major program element and sub-program, for the following cross-cutting areas:

- Global Climate Change
- Climate Change Action Plan
- Partnership for New Generation of Vehicles
- American Textiles Partnership
- American Computation and Technology Initiative
- Pollution Prevention
- Former Soviet Union
- Science and Education Programs
- Technology Transfer

Describe, by major program, significant accomplishments in FYPY, and planned accomplishments for FYCY.. and FYBY that have or will support the organization's mission.

Figure IV-3b
Executive Summary, EWD - Sample Format

Sample Format

Major Changes

Describe major changes occurring within the organization. Are there new starts, program terminations, ramp-downs or programmatic shifts within the organization? Are the changes due to Congressional direction, Administration policy changes, Executive Orders, or new legal requirements? Provide graphs or tables that display funding changes described above.

Major Issues

Describe budget issues, concerns or sensitivities that may significantly impact program activities, stakeholders, geographic regions, or future program costs.

Site Funding and Federal & Contracting Staffing Profiles

Provide tables and graphs that reflect site and staffing funding trends and comparisons by program. At a minimum, include:

- Total organizational funding by major program element and fiscal year
- Total organizational funding by site and major program element
- Federal staffing at HQ & field sites by major program element
- Contractor employment by major program element and site

Performance Measures

Describe several key program performance measures that tie to DOE's Strategic Plan, the Secretary's Performance Agreement with the President, and the Budget Highlights.

Signature of the Assistant Secretary _____ Date_____

Figure IV-3b
Executive Summary, EWD - Sample Format

c. Program Mission (previously titled Program Overview). This schedule is required for each major program element. It links the program's general goals and objectives to the Department's Strategic Plan, Annual Performance Plan, the Secretary's Performance Agreement with the President and provides a framework for grouping more detailed information into subordinate Program Performance Summaries. It should answer the following key questions:

(1) What is the overall mission or main purpose of the program? How does it support the Department's Strategic Plan? Is the mission statutorily mandated? How does it benefit the American public?

(2) What is the strategy for accomplishing the mission? What are the long range goals and objectives? What is the future direction of the program? Are there any new initiatives, program shifts or ramp downs? What are the primary drivers of change from the CY to the BY?

(3) List several key program performance measures that support the Department's Strategic Plan and the Secretary's Performance Agreement with the President. These measures will also be used to prepare the budget highlights and annual performance plan required by the Government Performance and Results Act (GPRA). Therefore, these measures should be broad enough to apply to all three fiscal years. Meaningful annual performance measures may also be reported at this level. For instance, does the program have major milestones? Is it on schedule? If not, why? What does the program expect to accomplish with the funding requested in the budget year? What was accomplished in the prior year? What is being accomplished in the current year, and how do all of these tie together to support the program mission? A few good measures that capture the essence of the program and its administration are much more useful than extensive displays of second- and third- order measures which tend to delve into operational minutiae.

(4) A sample format is shown in Figure IV-3c.

SAMPLE FORMAT

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY, RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands, Narrative in whole dollars)

BIOLOGICAL AND ENVIRONMENTAL RESEARCH

PROGRAM MISSION

The Biological and Environmental Research Program (BER) provides fundamental science to underpin the five business thrusts of the Department's strategic plan. The information developed by this program will increase the understanding of and, technological solutions to major problems in biology, medicine, and the environment. Through its support of peer-reviewed research at national laboratories, universities, and private institutions, the program develops the knowledge needed to identify, understand, and anticipate the long-term health and environmental consequences of energy use and development.

The GOAL of the BER program is to:

Develop information, advanced technologies, and technological tools for identification, characterization, and mitigation of adverse health or environmental consequences of energy production, development, and use.

The OBJECTIVES related to these goals are:

Figure IV-3c
Program Mission

SAMPLE FORMAT

1. To CONTRIBUTE TO A HEALTHY CITIZENRY - Map the fine structure of the human genome by the year 2005; conduct fundamental research necessary for the development of advanced medical technologies and radiopharmaceuticals; and use the unique National Laboratory facilities to determine biological structure and function at the molecular and cellular level.

PROGRAM MISSION - BIOLOGICAL AND ENVIRONMENTAL RESEARCH (Cont'd)

2. To CONTRIBUTE TO CLEAN UP OF THE ENVIRONMENT - Conduct fundamental research necessary for the development of economical and efficient advanced remediation tools and risk assessment methodologies for containing wastes and cleaning up DOE's contaminated sites, particularly in support of EM's mission.

3. To UNDERSTAND GLOBAL ENVIRONMENTAL CHANGE - Develop the data and understanding necessary to predict the potential contribution and consequences of energy use and production on the global environment.

PERFORMANCE MEASURES:

Performance measures related to basic science activities are primarily qualitative rather than quantitative. The quality of the BER program is continuously evaluated through the peer-review process which includes: review panels comprised of outside experts, advisory committees, site visits, and review conducted by the Energy Research Office of Program Analysis. Some quantitative performance measures:

1. Percent of the structure of the human genome mapped.

2. Number of advanced medical technologies and radiopharmaceuticals developed and put into general use.

Figure IV-3c
Program Mission

3. Number of advanced remediation tools (e.g., bioremediation) and risk assessment methodologies developed and employed to contain hazardous waste and clean up DOE contaminated sites.

4. Number of generally accepted and routinely operated predictive models of the effects of energy use on the global environment.

SIGNIFICANT ACCOMPLISHMENTS AND PROGRAM SHIFTS:

- The program has developed new measurement technologies (e.g., chemical and biological sensors) in the Analytical Technology sub program to enhance research carried out in BER activities, notably, environmental and health sciences research.

PROGRAM MISSION - BIOLOGICAL AND ENVIRONMENTAL RESEARCH (Cont'd)

- New strategies for cleanup, e.g., use of new biological and biotechnological tools (e.g., microbes that breakdown contaminants) have been developed for stubborn remediation problems.

- Advancement has been made in technologies to understand and mitigate the potential health effects from energy activities and cleanup operations. Emphasis is placed on the risks to human health from exposures to low-levels of radiation and chemicals both at home (e.g., radon) and at work (e.g., waste site cleanup).

- Critical information has been developed regarding the molecular nature of the human genome and genomes of other organisms, and exploration is on-going in the basic chemical structures of important biological molecules relates to their function in living cells. These continued advances are central to understanding health effects and human disease-susceptibility and for applications of biotechnology to the Department's missions.

Figure IV-3c
Program Mission

SAMPLE FORMAT

- Predictive tools are being enhanced year by year to quantify global environmental changes, particularly in carbon dioxide research, induced by human activities, including energy production and use. Emphasis is continuing on the role of clouds in climate and on developing advanced climate models using the world's most advanced computers.

- New nuclear medicine technologies and radiopharmaceuticals to improve medical diagnosis and therapy have been developed contributing to improved health care delivery while reducing costs by achieving early diagnosis and treatment.

- Research in the area of in-door air quality related to radon exposure has been concluded.

Figure IV-3c
Program Mission

d. Program Funding Profile. For the Congressional budget request Departmental organizations should update the Program Funding Profile(s) they provided in the OMB budget submission to reflect final OMB allowances . The format of this table depends upon under which jurisdiction the program's appropriation falls. **Please note that column headers are different for the Congressional submission**.

(1) For appropriations under the jurisdiction of the Energy and Water Development subcommittee, the Program Funding Profile should be developed on a **non-comparable basis**. To present non-comparable data, the stub column should list FYBY structure activities as well as FYPY and FYCY structure activities that are not included in the FYBY structure. The Program Funding Profile should include five columns as follows: (See Figure IV-3d.1)

(a) **FYPY Current Appropriations**. Reflects final enacted appropriations which include reprogrammings, supplementals, rescissions, general reductions and other approved "real" adjustments (e.g., GSA rents reduction). Footnotes shall be used to explain reductions or use of prior year balances.

(b) **FYCY Original Appropriation**. Reflects the FYCY. Congressional enacted appropriation amount provided in the conference report of Energy and Water Development Appropriation Act.

(c) **FYCY Adjustments**. Reflects any enacted budget adjustments (i.e., approved reprogrammings, general reductions, specific reductions (e.g., GSA Rents). Footnotes shall be used to identify and explain each adjustment. General reductions that are distributed to program items in the CY Adjustments column should be reversed in the Adjustment line of the CY Adjustments column so that the correct amount is shown in the total line of the CY Adjusted Appropriations column.

(d) **FYCY Current Appropriations**. The sum of the FYCY Original Appropriation and CY Adjustments columns will be entered in this column.

(e) **FYBY Request**. Reflects total amount requested in the President's budget including the FYBY impact of pending FYCY supplementals, if any.

(f) **FYBY+1 Request**. In even numbered budget years, activities funded by the National Security subfunction (053) will provide one outyear (BY+1).

(2) For appropriations under the jurisdiction of the Interior and Related Agencies Committee, the Program Funding Profile should be prepared on a comparable basis (i.e., the stub column should list FYBY structure activities only). This table should include six columns as follows: (See Figure IV-3d.2)

(a) **FYPY Enacted**. Reflects final adjusted appropriations including reprogrammings, enacted supplementals, etc. made comparable to the FYBY structure. Where necessary, two footnotes will be used: one to identify approved adjustments; and another to identify comparability between the BY structure and the PY Enacted structure.

(b) **FYCY Enacted**. Reflects amounts contained in the enacted appropriation made comparable to the BY structure. Where necessary, two footnotes will be used: one to identify approved adjustments; and another to identify comparability between the BY structure and the CY Enacted structure.

(c) **FYBY Base**. Base amounts are the FYCY enacted plus any anticipated non-discretionary increases that will have to be funded in FYBY. The majority of non-discretionary items will relate to staffing and supporting activities. Increases or decreases shown here will generally include the following:

1 Increases to basic Federal Telecommunications Systems (FTS) and Standard Level User Charge (SLUC/rent) costs.

2 Adjustment for increase or decrease in the total number of compensable days. For example: FY 1996 and FY 1997 contain 261 compensable days including paid holidays while FY 1995 contained 260.

3 Estimated statutory pay cost increases. Do not reflect anticipated promotions. (See economic assumptions in Attachment D of Congressional Call)

4 Annualization of FTEs filled during FYCY. For example, new FTEs included in the FYCY appropriations would have only partial funding considering the lapse rate for the delay in filling vacancies. The personnel costs for these FTEs must be annualized in the FYBY. Therefore, the difference between full year funding and current year funding would be considered a mandatory increase. Annualized items do not include commitments, phase funded construction, or items which have been authorized by law but not funded in previous years.

(d) **FYBY Request**. Reflects total amount requested in the President's budget including FYBY impact of pending FYCY supplementals. A footnote, describing any comparability that exists between the BY structure and the PY and/or CY structures, shall be applied to the amount in the BY column and to the amount in the other FY(s) as appropriate.

(e) **Program Change - Request vs Base**. A two column listing of the BY program change versus the BY Base is required. Both the dollar change and the percent change must be shown. The dollar change must be calculated as BY Request minus BY Base. The percent change must be calculated as the dollar change divided by the BY Base multiplied by 100. The appropriate sign (+ or -) should be used also.

(f) **Staffing (FTEs).** The number of Full Time Equivalent Federal employees funded in each year of the Program Funding Profile must be shown by Headquarters and Field after the total section.

(3) **Conventions**: The following standard instructions should be followed for both the Energy and Water Development and the Interior and Related Agencies Appropriations:

(a) **Adjustment Line**. Adjustments that serve as financing mechanisms such as use of prior year balances or offsetting receipts shall be placed **below** the Program Funding Profile subtotal and included in the Program Funding Profile total. Each entry in the Adjustment Line must have a footnote fully explaining the adjustment. General reductions, specific reductions (e.g., GSA rents), and savings (e.g., procurement reform) shall be distributed above the subtotal line in the FYCY. Adjustments column. BARRS permits dollar entries and footnotes in all columns of the adjustment line.

(b) **Authorizations**. Public Law Authorizations must be shown. The General Counsel list of Public Law Authorizations is available in BARRS and printed copies can be obtained from the Office of Corporate Financial Systems (CR-60).

(c) **Footnotes**. All footnotes indicated on the Program Funding Profile should be gathered and listed alphabetically after the Authorizations. The order of footnotes should be left to right and top to bottom.

(4) BARRS supports the preparation of the Program Funding Profile including up to three footnotes on any item on the Program Funding Profile and also supports entry of Public Law Authorizations approved by the Office of General Counsel. Additionally, section information or other annotations can be appended to the Public Law Authorizations.

BIOLOGICAL AND ENVIRONMENTAL RESEARCH

PROGRAM FUNDING PROFILE

(Dollars in thousands)

Sub-program	FYPY Current Appropriation	FYCY Original Appropriation	FYCY Adjustments	FYCY Current Appropriation	FYBY Request
Analytical Technology	$ 8,706	$ 8,880	$ 0	$ 8,880	$ 8,880
Environmental Research	44,400	50,100	-1,000	49,100	35,300
Health Effects	35,521	30,792	0	30,792	28,332
General Life Sciences	107,664	112,575	0	112,575	111,052
Medical Applications	47,732	38,900	0	38,900	38,900
Carbon Dioxide Research	86,848	88,400	0	88,400	88,400
Facilities Operations	30,670	31,822	0	31,822	35,805
Subtotal, Research	$ 361,541	$ 361,469	$ -1,000	$ 360,469	$ 346,669
Construction	67,200	62,595	0	62,595	36,113
Subtotal, BER	$ 428,741	$ 424,064	$ -1,000	$ 423,064	$ 382,782
Adjustment	-5,401a/	-1,000 b/	+1,000	0	0
TOTAL, BER	$ 423,340	$ 423,064	$ 0	$ 423,064	$ 382,782

a/ Use of prior years unobligated balances ($5,401).
b/ General reduction distributed to Environmental Research sub-program.
Public Law Authorizations:
Public Law 95-91, “Department of Energy Organization Act” (1977)

Figure IV-3d.1
Program Funding Profile, EWD

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(Dollars in thousands)

PROGRAM FUNDING PROFILE

Industry Sector

Activity	FY PYxx Enacted	FY CYxx Enacted	FY BYxx Base	FY BYxx Request	Program Change Request vs. Base Dollar	Program Change Request vs. Base Percent
Energy Systems						
Operating Expenses	$ 27,544	$ 29,893	$ 29,893	$ 44,630	$ +14,737	+49%
Waste Minimization						
Operating Expenses	$ 20,235	$ 25,992	$ 25,992	$ 33,592	$ +7,600	+29%
Process Efficiency						
Operating Expenses	$ 50,794	$ 53,842	$ 53,842	$ 72,253	$ +18,411	+34%
Implementation and Deployment						
Operating Expenses	$ 4,462	$ 7,010	$ 7,010	$ 20,361	$ +13,351	+190%
Management and Planning						
Operating Expenses	$ 5,890	$ 6,678	$ 6,678	$ 7,244	$ +566	+8%
Management - Capital Equipment						
Capital Equipment	$ 2,776	$ 1,631	$ 1,631	$ 2,588	$ +957	+59%
TOTAL	$ 111,701	$ 125,046	$ 125,046	$ 180,668	$ +55,622	+44%
Summary						
Operating Expenses	$ 108,925	$ 123,415	$ 123,415	$ 178,080	$ +54,665	+44%
Capital Equipment	2,776	1,631	1,631	2,588	+957	+59%
Total Program	$ 111,701	$ 125,046	$ 125,046	$ 180,668	$ +55,622	+44%
Staffing (FTEs)						
HQ FTEs	3	4	4	4		
Field FTEs	53	73	73	73		
Total FTEs	56	77	77	77		

Authorizations:
P.L. 102-486, “Energy Policy Act of 1992”

Figure IV-3d.2
Program Funding Profile, INT

e. Program Funding By Site. The Program Funding by Site schedule (Figure IV-3e) is required only for programs that are funded by the Energy and Water Development Appropriations Subcommittee. This report displays funding by operations office, laboratory and other major facilities at the program level, and has the same columns as the Program Funding Profile. **The column totals must equal the totals of the Program Funding Profile as well as the specific site amounts provided in the Program Funding by Contractor and Location System (PFCLS)**.

BIOLOGICAL AND ENVIRONMENTAL RESEARCH
(Dollars in thousands)

PROGRAM FUNDING BY SITE

Field Offices/Sites	FYPY Current Appropriation	FYCY Original Appropriation	FYCY Adjustments	FYCY Current Appropriation	FYBY Budget Request
Albuquerque Operations Office					
Los Alamos National Laboratory	$ 19,187	$ 17,539	$ 0	$ 17,539	$ 15,860
Chicago Operations Office					
Argonne National Lab (East)	35,718	35,077	-100	34,977	31,720
Brookhaven National Lab	89,682	86,092	-240	85,852	77,853
Environmental Measurements Lab	27,656	26,709	-70	26,639	24,153
Idaho Operations Office					
Idaho National Engineering Lab	9,225	10,210	0	10,210	9,235
Oakland Operations Office					
Lawrence Berkeley Lab	19,965	20,321	0	20,321	18,377
Lawrence Livermore National Lab	8,458	4,606	0	4,606	4,165
Oak Ridge Operations Office					
Oak Ridge Institute for Science & Education	1,036	1,002	0	1,002	906
Oak Ridge National Lab	38,662	47,151	-100	47,051	42,638
Richland Operations Office					
Pacific National Northwest Lab	182,784	176,127	-490	175,637	159,275
Savannah River Operations Office					
Savannah River Technology Center	3,068	6,007	0	6,007	5,432
All Other Sites	800	823	0	823	768
Subtotal	$ 436,241	$ 431,664	$ -1,000	$ 430,664	$ 390,382
Adjustment	-5,401a/	-1,000 b/	+1,000	0	0
TOTAL	$ 430,840	$ 430,664	$ 0	$ 430,664	$ 390,382

a/ Use of prior years unobligated balances.
b/ General reduction distributed to Environmental Research sub-program.

Figure IV-3e
Program Funding by Site

f. Summary of Changes. The Summary of Changes schedule is required by programs funded by Interior and Related Agencies Appropriations only. It follows each Program Funding Profile in the justification material and has amounts consistent with those contained in the Program Funding Profile. BARRS is available to support this requirement.

(1) The information presented on this exhibit includes the CY Enacted, a summary explanation of the non-discretionary changes to the CY that comprise the BY Base, and details of major increases and decreases from the BY Base that are proposed in the BY request. FYBY base adjustments will be included in this exhibit. These amounts should be in agreement with FYBY Base amounts shown on the Program Funding Profile. See the sample format shown in Figure IV-3f.

(2) The stub should be constructed in such a way that the explanation of changes will be grouped by Decision Unit and provided for each Key Activity that has a non-zero difference between the CY and the BY Request. Totals must agree with the Program Funding Profile totals. Narrative explanations should succinctly describe changes. Offsetting increases or decreases within individual Key Activity elements should be included in any explanation that is aggregated at the Key Activity level. A more complete discussion of the changes should be provided in the Program Performance Summary narrative justification.

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

SUMMARY OF CHANGES

Industry Sector
(Only programs funded under the Interior and Related Agencies Appropriations Subcommittee)

FY CYxx Enacted	$	125,046
- Non-Discretionary -		0
FY BYxx Base	$	125,046
Energy Systems		
- Advanced Topping Cycles - Descriptive text for the increase or decrease appears here		+11,092
- Continuous Fiber Ceramic Composites - Descriptive text for the increase or decrease appears here		-1,964
- Electric Drives - Descriptive text for the increase or decrease appears here		+6,451
- Combustion Processes - Descriptive text for the increase or decrease appears here		-130
- Industrial Combustion Equipment - Descriptive text for the increase or decrease appears here		-118
- Heat Pumps - Descriptive text for the increase or decrease appears here		-107
- Recuperators - Descriptive text for the increase or decrease appears here		+7
- Thermal Science - Descriptive text for the increase or decrease appears here		-494
Waste Minimization		
- Waste Reduction - Descriptive text for the increase or decrease appears here		+7,000
- Waste Utilization and Conversion - Descriptive text for the increase or decrease appears here		+782

Figure IV-3f
Summary of Changes, INT
Page 1 of 2 Pages

SUMMARY OF CHANGES - Industry Sector (Cont'd)

- Municipal Solid Waste Combustion - Descriptive text for the increase or decrease appears here	+1,324
- MSW Data Collection and Analysis - Descriptive text for the increase or decrease appears here	-336
Process Efficiency	
- Metals Initiative - Descriptive text for the increase or decrease appears here	+2,557
- Process Electrolysis - Descriptive text for the increase or decrease appears here	+972
- Foundries and Glass - Descriptive text for the increase or decrease appears here	+8,886
- Advanced Materials - Descriptive text for the increase or decrease appears here	+3,179
- Alternative Feedstocks - Descriptive text for the increase or decrease appears here	+3,895
- Bioprocessing - Descriptive text for the increase or decrease appears here	-1,036
- Process Development - Descriptive text for the increase or decrease appears here	-133
- Pulp and Paper - Descriptive text for the increase or decrease appears here	+255
- Food, Textiles, and Agriculture - Descriptive text for the increase or decrease appears here	-164
Implementation and Deployment	
- Implementation and Deployment - Descriptive text for the increase or decrease appears here	+13,351
Management and Planning	
- Evaluation, Planning and Analysis - Descriptive text for the increase or decrease appears here	-19
- Program Direction - Descriptive text for the increase or decrease appears here	-585
Management - Capital Equipment	
- Capital Equipment - Energy Systems - Descriptive text for the increase or decrease appears here	+277
- Capital Equipment - Waste Minimization - Descriptive text for the increase or decrease appears here	-61
- Capital Equipment - Process Efficiency - Descriptive text for the increase or decrease appears here	+741
FY BYxx CONGRESSIONAL Budget Request -	$ 180,668

Figure IV-3f
Summary of Changes, INT
Page 2 of 2 Pages

g. Program Performance Summary. This schedule is the primary budget document used to describe and justify program activities. It is prepared for each component or sub-program of the major program element. **The information provided at this level should be primarily quantitative in nature.** The narrative information that is provided should focus on what is being accomplished **at the sub-program level** with the funding requested/previously appropriated.

(1) Organizations funded under the Energy and Water Development Appropriations Subcommittee shall prepare the Program Performance Summary according to the guidance provided below (see Figure IV-3g.1):

(a) **Section I - Mission Supporting Goals & Objectives**. This section of the Program Performance Summary shall concisely describe the main purpose of the sub-program and the key goals and objectives that support the mission of the major program element. Base program and any lower program elements (key activities) should also be described in this section to avoid rejustifying them each fiscal year. New starts, completions, terminations, and key accomplishments (both past and planned) of the sub-program and any subordinate elements should be described in Section III "Performance Summary" by fiscal year.

(b) **Section II - Funding Schedule**. This table reports the sub-program's funding by its subordinate elements (key activities) by fiscal year (PY, CY, BY). In addition, the table includes two columns that provide the dollar and percent change from the CY to the BY.

(c) **Section III - Performance Summary**.

1 *Accomplishments*. This section of the Program Performance Summary should provide narrative descriptions of past, current and planned activities and accomplishments by key activity and include the associated funding for each of the three fiscal years (PY, CY, BY). The purpose of this section is to convey what the funding is to be used for and why it is important. Narrative descriptions should be pithy, and technical terms ("DOEese") should be avoided. Activities and accomplishments should be described in quantifiable terms, to the extent possible. New starts, major initiatives, and items of Congressional interest should be described separately.

The funding associated with the activities and accomplishments should be displayed to the right of the narrative descriptions by fiscal year and equal the amounts presented in the funding table provided in Section II above. See Figure IV-3g.1.

2 *Explanation of Funding Changes from FYCY to FYBY*. This section of the Program Performance Summary should explain the change in funding by key activity from CY to BY. Why is there a change in funding? Does an increase reflect a work scope change, a new start, changes in cost of materials or labor, or new regulatory requirements? Does a funding decrease reflect a completed project, or shift in program priorities? Any funding change should be described clearly and succinctly.

A tabular display of the funding change should also be provided to the right of each narrative explanation. The total change in funding from CY to BY presented in this column must tie back to the total funding change presented in the funding schedule provided in Section II above. **Net changes of zero dollars ($0) should be broken out by subordinate activity**.

3 *Major Issues*. This section should be included when there are significant issues, concerns or sensitivities related to the sub-program. Potential program impacts should also be described to the extent possible. Examples include pending litigation and international or public/private partnerships.

(2) Organizations funded under the Interior and Related Agencies Appropriations Subcommittee should prepare the Program Performance Summary according to the guidance provided below (see Figure IV-3g.2).

(a) **Section I: Mission Supporting Goals & Objectives**. Each Program Performance Summary must begin with a Mission Supporting Goals & Objectives Statement. This statement is intended to introduce the reader to the ensuing group(s) of Key Activities. Performance goals and objectives should be included for each major program activity. Key performance indicators in terms of outputs and outcomes should also be included to support the performance indicators outlined in the Program Mission. Detailed information about specific activities should be presented later in the Performance Summary. The use of acronyms and detailed technical explanations or statements should be avoided to facilitate the reader's comprehension of the Key Activities.

(b) **Section II.A.: Funding Table**. The Funding Table follows the Mission Supporting Goals & Objectives. This table will provide additional detail supporting the Program Funding Profile. The stubs in the Funding Table should be the Key Activity element titles presented in the Performance Summary section (Part III) and should be, at a minimum, the level of detail indicated by the budget structure attached to the FYBY Congressional call. Groups of Key Activities should have totals as appropriate.

1 *FYPY*. Reflects final enacted appropriations including supplementals, rescissions, reprogrammings, general reductions on a comparable basis.

2 *FYCY*. Contains the original CY appropriation plus any real or comparable adjustments such as reprogrammings, rescissions, general reductions, restructures, or reorganizations.

3 *FYBY*. Contains the BY request amount.

4 *% Change*. The percent change of the BY from the CY is computed by the formula: % Change = [(BY - CY)/CY] x 100. If the CY is zero (0) or the computation yields greater than 999 percent, the entry is: >999.

(c) **Section II.B.: Laboratory and Facility Funding**. All programs that perform work at national laboratories or major DOE facilities should include this table in the Program Performance Summary. For programs that are currently unable to breakout the total amount by site, the "All Other" line should be used to ensure the total mount is reflected. Congressional staff requested this table to track program funding at all laboratories and facilities. If this table appears on the same page as the Funding Table, the column headings are not repeated. The identical headings to the Funding Table are provided if this table appears on a new page. The data entered follow the same rules as the Funding Table. Use of BARRS to enter complete PFCLS data will allow automatic creation of this table.

(d) **Section III: Performance Summary**. The format of this section parallels the Funding Table. The identical headings to the Funding Table are provided with the exception of the % Change column. These descriptions serve as the primary justification for individual program components. Care should be taken in describing the three years of budget activity in precise terms. Narrative justification should be oriented towards how the activity will help meet the output measures stated in the associated Mission Supporting Goals & Objectives and Program Mission. The use of acronyms and technical jargon should be avoided. Descriptions should provide information on program changes, staffing requirements and identification of technology transfer activities. Meaningful activity descriptions should be provided for each fiscal year. The term "No Activity" should only be used in years prior to starting an activity or after completing an activity. **Also, do not repeat verbatim the activity**

descriptions in each of the three years. The following items, at the minimum, need to be discussed in this section:

1 *Construction*. Activity Descriptions should contain **consolidated** Construction Key Activity structure elements or include the construction dollars in the various program activity structure elements. Please **do not** use this section to list each construction project associated with this Program Performance Summary because Part IV has been designed specifically to capture individual construction project information. BARRS can be used to produce summary construction amounts by giving individual projects a reporting level indicator (RLI) of "AD" under a Construction key activity (RLI of KA). The dollars for each project can be entered, but only the total for the "KA" Construction element will be printed on the report.

2 *Comparability Transfers*. Comparability transfers must be separately addressed with their own narrative description. Narrative descriptions for all activities involving a comparability transfer must begin with the word "TRANSFER:" capitalized and followed by a colon.

In the budget structure attached to the FYBY Congressional Call, a comparability is denoted by a structure element with a period (".") in either the PY, or the appropriate CY (CS, or CM) columns, and an "X" in the BY column of the structure report.

3 *Presidential Initiatives/Other Ini*tiatives: Activity descriptions associated with investment initiatives must begin with the investment initiative title in capital letters as an introductory header to identify these high-priority activities. Presidential initiatives include the Climate Change Action Plan (CCAP), Partnership for a New Generation of Vehicles (PNGV), and Weatherization. Associated funding amounts for these activities must also be clearly identified. See Figure IV-3g.2 for a sample narrative.

4 A new feature of BARRS can be used to provide dollar amounts in the narrative paragraphs of the performance Summary, if desired, by using the print option $ with Act Desc: Yes. Using this option avoids having dollar amounts in text that do not sum to the totals. The dollar amounts are added to the end of the text and enclosed in parenthesis.

(e) **Section IV.A.: Construction Project Summary**. This is a list of all construction projects which have funding in FYPY through FYBY. Projects are listed in descending fiscal year order beginning with FYBY.

1 The Heading of the Project Summary should include the notation that tabular dollars are in thousands and narrative material is in whole dollars. An additional line in the Heading will follow the fiscal year and budget cycle identification line if Projects previously transmitted to Congress have changed data or text. The heading will only be placed on the Project Summary, Part IV.A. The heading will not be repeated on the following Project Descriptive Summary pages, Part IV.B.

2 The title of Part IV. A. will include the expense type; e.g., "IV. A. Operating Expense Funded Project Summary" or "IV. A. Construction Funded Project Summary."

3 A "Redline indicator" (i.e., vertical line in the left margin) will be used for each project that has changes from the previous Part IV. A. transmitted in the last budget to Congress.

4 **Project No**.. The project number, obtained from the Budget Formulation Team, consists of the last two digits of the year of initial funding of the project, a single letter code for the organization, and a three digit number. General Plant Projects have the letters "GP" in place of the initial funding year.

5 **Project Title**. The title of the project must be the same as the title that was given the project number. Project titles shall not be changed.

6 **Previous Obligations**. The total of all obligations previous to the FYPY is entered in this column.

7 **FYPY Adjusted**. The amount appropriated in FYPY, including any adjustments is entered in this column.

8 **FYCY Adjusted**. The FYCY amount - either requested for appropriation or appropriated, including any amendments or adjustments, depending on the status of Congressional action - should appear in this column.

9 **FYBY Request**. The amount of the BY request for the project is entered in this column.

10 **Unappropriated Balanc**e. The balance of the project total estimated cost (TEC) to be requested in fiscal years after the BY.

11 **TEC**. The project Total Estimated Cost.

(f) **Project Descriptive Summary (Section IV.B.)** - For each project listed in Part IV.A., a separate Project Descriptive Summary (Part IV.B.) is to be provided.

1 The same format is to be used for construction funded and operating expense funded projects. The title of Part IV. B. will include the expense type; e.g., "IV. B. Operating Expense Funded Project Summary" or "IV. B. Construction Funded Project Summary."

2 Information for Strategic System (SS) or Major System (MS) projects will be in agreement with the project plan baseline document. Only directed changes (i.e., directed by Congressional action) or Energy Systems Acquisition Advisory Board (ESAAB) approved changes are to be identified.

3 The Financial Schedule (Section 2 of Part IV.B.) shall be reconciled to the Departmental Primary Accounting System (DPAS) i.e., Financial Information System (FIS) and Funds Distribution System (FDS).

4 Project changes between the present Part IV.B. and the Part IV.B. transmitted in the last budget to Congress will be explained in Section 3 of Part IV.B. with a "Redline indicator" in the left margin of the explanation. Every effort should be made to ensure that project narrative and any necessary explanation of changes are succinct (i.e., short but meaningful) so that each Part IV. B. is only a single page. Footnotes should be used sparingly. See Figure IV-3g.2 for examples of Part IV.A. and Part IV.B.

(g) **Environmental Restoration (EM-40) Projects**. For Environmental Restoration (EM-40) projects under the Assistant Secretary for Environmental Restoration and Waste Management, the following definitions shall apply for each SS unless a separate precedent has been established:

1 Total Estimated Cost (TEC): This term will not be used for EM-40 projects. The right most column heading of Part IV. A. will be modified to be "TPC". In addition, the entry for TEC in Part IV. B. will be state "see TPC".

2 Total Project Cost (TPC): The cost included in the most current Five Year Plan or in an approved Baseline Document which sums all previous costs plus projected costs for the next five fiscal years. The TPC shall include all associated Other Project Costs for this period. If certain projects which extend beyond the Five Year Plan have approved baseline in place, they shall be used in their entirety.

3 Additionally, in Part IV.B., for EM-40 projects the Start Date: will be changed to Date Cleanup Phase Initiated: and the Completion Date: will be changed to Date Cleanup Phase Ends:

BIOLOGICAL AND ENVIRONMENTAL RESEARCH

ENVIRONMENTAL RESEARCH

(Tabular dollars in thousands, narrative in whole dollars)

I. Mission Supporting Goals and Objectives: Research is focused on understanding the basic chemical, physical, and biological processes of the Earth's atmosphere, land, and oceans and how these processes may be affected by energy production and use, primarily the emission of carbon dioxide from fossil fuel combustion. A major part of the research is designed to provide the data that will enable an objective assessment of the potential for, and consequences of, global warming. The program is comprehensive with an emphasis on the radiation balance from the surface of the Earth to the top of the atmosphere including the role of clouds and on enhancing the quantitative models necessary to predict possible climate change at the global and regional levels. There are four contributing areas to this research program: **Climate and Hydrology, Atmospheric Chemistry and Carbon Cycle, Ecological Processes, and Human Interactions**. The National Institute for Global and Environmental Change (NIGEC) is included within these four areas. The Environmental Processes subprogram is DOE's contribution to the U.S. Global Change Research Program that was codified by Congress in the Global Change Research Act of 1990.

II. Funding Schedule:

Program Activity	FYPY	FYCY	FYBY	$ Change	% Change
Climate and Hydrology	$ 53,515	$ 51,804	$ 54,267	$+ 2,463	+ 4.8%
Atmospheric Chemistry and Carbon Cycle	27,317	29,032	27,164	- 1,868	- 6.4%
Ecological Processes	12,287	11,797	11,448	- 349	- 3.0%
Human Interactions	9,733	8,981	9,458	+ 477	+ 5.3%
Total, Environmental Processes	$ 102,852	$ 101,614	$ 102,337	$+ 723	+ 0.7%

Figure IV-3g.1
Program Performance Summary, EWD

Sample Format
BIOLOGICAL AND ENVIRONMENTAL RESEARCH
ENVIRONMENTAL PROCESSES

III. Performance Summary- Accomplishments:	**FYPY**	**FYCY.**	**FYBY**
Climate and Hydrology			
-Parallel Ocean Program model delivered by CHAMMP to climate modeling community for coupling with atmospheric models. Continued ocean process modeling efforts to improve understanding of exchange of heat and carbon dioxide between the ocean and atmosphere.	xxx		
-Initiated major field program at Cape Hatteras, NC, to probe changes in biological and geological properties at the ocean-land interface from increasing concentrations of atmospheric carbon dioxide.	xxx		
-Implement initial experiments with coupled climate system models on massively-parallel super-computers to capitalize on computational improvements. Execute multi-decade simulations of climate change to address century-scale climate prediction and evaluate estimates of model uncertainties to changes in atmospheric concentrations of greenhouse gases.		xxx	
-Complete measurements of ocean carbon in the Indian Ocean as part of the global survey of inorganic carbon in the ocean to understand role of ocean in the uptake of atmospheric carbon dioxide.		xxx	
-Complete evaluation of data obtained in field campaign at land/ocean interface.			xxx
Total Climate and Hydrology	$53,515	$51,804	$54,267

Figure IV-3g.1
Program Performance Summary, EWD

Sample Format
BIOLOGICAL AND ENVIRONMENTAL RESEARCH
ENVIRONMENTAL PROCESSES

III. Performance Summary- Accomplishments:	**FYPY**	**FYCY.**	**FYBY**
Atmospheric Chemistry and Carbon Cycle			
-Second ARM Site established in Tropical Western Pacific. Started key measurements to determine how tropical clouds are mathematically represented in General Circulation Models (GCMs).	xxx		
-Terrestrial Carbon Processes Research Program initiated to quantify fraction of fossil carbon dioxide taken up by terrestrial vegetation and to predict future uptake.	xxx		
-Acquired and analyzed data to determine the possible impact of energy emissions on tropospheric and stratospheric ozone.	xxx		
-The Quantitative Links program was completed, delivering information for the ARM and other programs.	xxx		
-Complete the experiments at the Oklahoma ARM site that will solve the puzzle of anomalous short wave absorption by clouds.		xxx	
-Begin periodic Intensive Observational Periods (IOPs) at the ARM site in the Tropical Western Pacific to improve parameterization of clouds in climate models. Continue collaborations with Australia, Papua New Guinea, and Japan. Initiate preparations for third ARM site on the North Slope of Alaska.		xxx	
-Continue experiments to quantify forest ecosystem responses to elevated carbon dioxide and climate variation.	xxx	xxx	

Figure IV-3g.1
Program Performance Summary, EWD

Sample Format
BIOLOGICAL AND ENVIRONMENTAL RESEARCH
ENVIRONMENTAL PROCESSES

III. Performance Summary- Accomplishments:	**FYPY**	**FYCY.**	**FYBY**
-Develop improved process models and methods for assessing regional consequences of atmospheric and climatic changes on ecological systems and human resources.		xxx	
-Participate in the North American Research Strategy for Tropospheric Ozone (NARSTO) Program, designed to quantify and characterize the scientific uncertainties of urban and rural smog and provide data for science-based air quality management decisions by Federal, state, and local authorities.		xxx	
-Field experiment of land-ocean research becomes fully operational and its completion results in determining if the coastal oceans are a source or sink for atmospheric carbon dioxide.		xxx	
Develop improved process models and methods for assessing regional consequences of atmospheric and climatic changes on ecological systems and human resources.		xxx	
-Establish third ARM Site on North Slope of Alaska and begin arctic data collection to support improvements in treatment of clouds and radiation in GCMs. Maintain full operation at the ARM sites in Oklahoma and the Tropical Western Pacific.			xxx
-Include advanced understanding of how clouds affect atmospheric heating and cooling in the GCMs based on ARM data. Initiate the next step in the comparison of models by coupling with ocean models to enable the long-term climate predictions necessary for understanding global climate change.			xxx

Figure IV-3g.1
Program Performance Summary, EWD

Sample Format
BIOLOGICAL AND ENVIRONMENTAL RESEARCH
ENVIRONMENTAL PROCESSES

III. Performance Summary- Accomplishments:	**FYPY**	**FYCY.**	**FYBY**
-Provide improved estimates of atmospheric carbon dioxide changes that result from fossil fuel combustion. Improve understanding of the terrestrial biosphere's role in the uptake of carbon dioxide (i.e., the carbon exchange between the atmosphere and forests).			xxx
Total Atmospheric Chemistry and Carbon Cycle	$27,317	$29,032	$27,164

Figure IV-3g.1
Program Performance Summary, EWD

Sample Format
BIOLOGICAL AND ENVIRONMENTAL RESEARCH
ENVIRONMENTAL PROCESSES

III. Performance Summary- Accomplishments:	**FYPY**	**FYCY.**	**FYBY**
Ecological Process			
-Provided regional estimates of sensitivity of ecological systems to climatic and atmospheric changes as a foundation for science-based assessments of the consequences of global change.	xxx		
-Evaluate success of global change fellowship program with respect to training of new scientists and the development of cross-disciplinary skills of the graduate- and postdoctoral fellows.		xxx	
-Synthesize initial results from experimental and observational studies to quantify responses of southern hardwood forest and arid land ecosystems to alterations in precipitation.			xxx
-Complete evaluation of data obtained in field campaign at land/ocean interface.			xxx
-Complete regional analysis to identify ecological systems most sensitive to climatic variation and change to provide improved assessments of consequences of climate change.			xxx
Total Ecological Processes	$12,287	$11,797	$11,448

Figure IV-3g.1
Program Performance Summary, EWD

Sample Format
BIOLOGICAL AND ENVIRONMENTAL RESEARCH
ENVIRONMENTAL PROCESSES

III. Performance Summary- Accomplishments:	**FYPY**	**FYCY.**	**FYBY**
Human Interactions			
-Continued development of integrated assessment models and other means for assessing the potential environmental and economic consequences of natural and human-induced climatic and atmospheric changes.	xxx		
-Supported new graduate and post-doctoral fellowships to provide for the next generation of multi-disciplinary research scientists.		xxx	
-Radon program completed, and results synthesized to develop protocols for identifying areas with high risk potential for elevated indoor radon..		xxx	
-Initiate a Young Scientists Award Program to strengthen global change research infrastructure at universities and national laboratories.			xxx
-Funding for SBIR and STTR programs.	xxx	xxx	xxx
Total Human Interactions	$9,733	$8,981	$9,458
Total Environmental Processes	**$102,852**	**$101,614**	**$102,337**

Figure IV-3g.1
Program Performance Summary, EWD

Sample Format
BIOLOGICAL AND ENVIRONMENTAL RESEARCH
ENVIRONMENTAL PROCESSES

EXPLANATION OF FUNDING CHANGES FROM FYCY TO FYBY:

Climate and Hydrology: The Atmospheric Radiation Measurement (ARM) program will continue to develop and operate the planned ARM sites, including the second and third sites located in the Tropical Western Pacific and the North Slope of Alaska, respectively. Activities within CHAMP, the UAV-ARM program, and relevant parts of NIGEC will proceed at levels appropriate to their scientific priorities and urgencies.	+$2,463,000
Atmospheric Chemistry and Carbon Cycle:- Activities within Marine Transport/Ocean Margins have focused on the role of coastal oceans as a source or sink for atmospheric carbon dioxide and the processes controlling the uptake, transport, and sequestration of carbon in the coastal ocean. Studies have included the use of biomarkers, measures of bacterial respiration, and studies of biogeochemical processes at the land/water interface. Research involving the development and application of such molecular and biological methods will be supported in the context of the synergistic and complementary research areas under the environmental remediation subprogram. Studies have included the use of biomarkers, measures of bacterial respiration, and studies of biogeochemical processes at the land/water interface. Research involving the development and application of such molecular and biological methods will be supported in the context of the synergistic and complementary research areas under the environmental remediation subprogram.	-$1,868,000
Ecological Processes: Experimental and observational studies will continue at a reduced pace. The program scope is maintained.	-$349,000

Figure IV-3g.1
Program Performance Summary, EWD

Sample Format
BIOLOGICAL AND ENVIRONMENTAL RESEARCH
ENVIRONMENTAL PROCESSES

Human Interactions: - Integrated assessment studies targeted at the science-based understanding of the implications of fundamental research in issues related to environmental processes will be strengthened. Newly initiated activities directed towards the inclusion and development of minority students in peer-reviewed research focused on environmental processes will be maintained.	+$477,000
Total Funding Change, Environmental Processes:	+$723,000

MAJOR ISSUES:
This section should be included when there are significant issues, concerns or sensitivities related to the sub-program (e.g., litigation).

Figure IV-3g.1
Program Performance Summary, EWD

INDUSTRIAL TECHNOLOGIES
INDUSTRY SECTOR
(dollars in thousands)

I. Mission Supporting Goals and Objectives: Process Efficiency

Process Efficiency concentrates on the core fabrication processes and energy intensive industries that provide the foundational infrastructure of the United States manufacturing economy. The four key activities in this subprogram area are: Materials and Materials Processing, Paper and Pulp, Chemicals and Petroleum Refining, and Food, Textiles, and Agriculture. Process Efficiency replaces previous Industrial Sector budget key activities of Materials Processing, Separations, Sensors and Controls, Bioprocessing, and Enabling Materials except for CFCC.

Process Efficiency addresses critical areas for increased research and development to improve energy efficiency in the energy intensive industries. Domestic producers in these industries are increasingly threatened by offshore competitors. Development of leading edge process technologies is viewed as a key strategy to building a strong industrial economy and is important to national security. These industries are among the largest industrial energy consumers, using about 30 quads annually to produce goods valued at about $900 billion. Energy costs are a significant part of total production costs with typical process energy efficiencies less than 50 percent. Therefore, the program goal of increasing energy efficiency can significantly improve the cost-competitiveness of these industries. In addition, utilization of improved sensors and controls is a key strategy that is embodied in each program area as a means to increase the energy efficiency and productivity of industrial processes. Aggressive government-industry action to develop and implement advanced production technologies is needed to maintain and enhance U.S. competitiveness. To achieve the program's objectives, the Process Efficiency program focuses on defining the industry “vision statements” of plants of the future by identifying the technical, market and regulatory challenges that impact the evolution of the next generation plants. New technologies can be developed, in cooperation with industry, that will: (1) eliminate energy-intensive unit processes, (2) improve present processing to enhance productivity while reducing energy demand, (3) reduce manufacturing costs to improve competitiveness, and (4) minimize environmental impact.

MATERIALS AND MATERIALS PROCESSING

Figure IV-3g.2
Program Performance Summary, INT

The Materials and Materials Processing program includes the mandated programs of Metals Initiative, Metal Casting Competitiveness, Advanced Manufacturing Initiative and the Advanced Materials Initiative, in addition to the generic program areas of Process Electrolysis, Foundries and Glass, Engineered Industrial Materials and Materials Manufacturing Technologies. These industries are among the largest industrial energy consumers, directly using about 5 quads annually (about 16 percent of total industrial energy consumption) to produce goods valued at about $65 billion. Energy costs are a significant part (more than $15 billion) of total production costs. The process industries addressed are either suppliers to or producers of virtually all manufactured goods in the United States. Therefore, successful technology development will have a significant positive effect on the national economy. The programs are guided by an analytical activity which reflects the viewpoint of industry referred to as the "vision of the future". These documents will be created and peer reviewed by industry. The vision statements will provide a blueprint to coordinate industry and government efforts.

The Metals Initiative is mandated by Public Law 100-680 and reauthorized by 102-486 (Energy Policy Act of 1992). These laws recognize that maintaining a viable domestic metals industry is vital to national security and economic growth. The Metals Initiative seeks to develop technologies that will "leapfrog" the metals industry into a state-of-the-art position, putting U.S. industries in a more competitive position worldwide. Major projects already underway aim directly at reduction of iron ores into molten iron and steel, spray forming of aluminum, and advanced process control for steel mills. Potential energy savings benefits of 0.6 Quad/year are estimated from successful completion of presently funded research projects. With successful completion of the direct iron making pilot plant study in mid FY 1995, plans are to demonstrate this technology at a commercial steel plant.

Process Electrolysis component focuses on research and development of improved technologies which increase the energy efficiency of aluminum production and new electrolytic technologies for other metals. After new concepts are evaluated and establish the viability of a new technology, the actual applied development work to demonstrate the specific industrial application is transferred to the Metals Initiative program. In FY 1995, process electrolysis research will be continued on projects for the aluminum, copper, magnesium, and neodymium industries. In the mid-term, present projects have the potential to save 0.44 to 1.14 quad annually.

Figure IV-3g.2
Program Performance Summary, INT

Foundries and Glass component focuses on improvements in glass processing, foundry practice, improved refractories, and mining. Work on activities in FY 1995 for foundries and glass plants of the future will include the scale-up and testing of a rapid glass refiner and improved high-temperature insulating fibers. In the long term, on-going projects could provide energy savings of 0.15 quad/year. Research will continue to be conducted at the National Metal Casting Research Institutes, established by the Metal Casting Program in accordance with P. L. 101-425 and the Energy Policy Act of 1992, Section 2106. In view of the unique nature of the industry, which is characterized by small businesses unable to support research with their limited resources, much of the cost-sharing is provided through the industry's professional societies and trade associations. Short- and mid-term savings for the metal casting program are 0.05 quad annually.

It is widely recognized that, while the U.S. is the world leader in basic research in materials, inadequate attention has been paid to the synthesis, processing, and applications engineering needed to adapt the basic technology to actual industrial applications. Advanced materials can save significant energy by enabling systems to operate at higher temperatures and can increase service lives with less downtime and lower annual capital costs. Enabling Materials activities focus on developing high-temperature, corrosion-resistant, and thermally insulating materials. Major efforts in FY 1995 include development and commercialization of ordered intermetallic alloys, ceramic composites, and a new, low-cost method for the production of near net shape composites through infiltration of powder preforms by reactive metals. Work will continue to bring the technology for recycling mixed plastics waste streams to the demonstration stage and to identify and solve material problems in the energy intensive industries, such as pulp and paper.

The Energy Policy Act requires the implementation of the National Advanced Materials and Advanced Manufacturing Technologies Initiatives. This Act establishes programs that support industry-led efforts to commercialize advanced technologies in materials and manufacturing. The Initiatives program is required to expedite the private sector deployment of advanced technologies to improve productivity, quality, and control in manufacturing processes that can foster economic growth, energy efficiency, and competitiveness. These Initiatives will be implemented in FY 1995 with the objective of reducing the technical and economic risks associated with commercialization and deployment of advanced technologies. Program plans will be completed in the second quarter of FY 1994 and solicitations will be issued later in FY 1994.

Figure IV-3g.2
Program Performance Summary, INT

CHEMICALS AND PETROLEUM REFINING

The Chemicals and Allied Products (SIC 28) industry, the largest exporting sector of U.S. industries, is truly global in nature, and partly dependent upon world economic conditions; more than two-thirds of the U.S. industry's direct foreign investment is in Europe and Canada. In response to market shifts, U.S. industry will move toward higher-value products. The Petroleum Refining (SIC 2911) industry is facing major restructuring in response to capital investment pressures to meet the Clean Air Act of 1990. This restructuring includes a trend of major decreases in R&D in favor of buying technology, and closing of small refineries beyond 1997.

Industry-derived "Visions" for the chemical and petroleum refining "Industries of the Future" are being developed to provide strategic direction to these programs, and will require increased focus on value-added processing from a total plant life-cycle perspective to minimize energy, waste, and feedstock costs for maximum productivity growth. The "Refinery of the Future" program plan will be completed in FY 1994 to support the "next generation" of integrated petroleum refinery processes that will sustain and enhance domestic refinery competitiveness through product yield improvement, energy efficiency, and waste minimization. Efforts are also underway to complete the "Chemical Industry of the Future" program plan. Current process improvement efforts are directed to increasing the efficiency of energy intensive separations processes in these two (petrochemicals) industries. One effort involves the development of catalyst models to aid process engineers in the design of more efficient catalysts for new and existing process operations. A second effort involves the development of bioprocessing capabilities for integration into chemical process systems. Of primary interest in this area is the development of enzymes and bioreactor systems that can operate in non-aqueous media. The opportunity for improved separations is large, since distillation and evaporation alone consume 2.6 quads per year. Major projects supported in 1995 include the hybrid Facilitated Transport Membrane (FTM) separation of propane from propylene in an oil refinery, active transport membranes (ATM) to remove hydrogen sulfide from natural gas, high temperature ceramic membranes for catalytic dehydrogenation, and commercial applications for polyphosphazene membranes. Sensor development addresses the control of the energy-intensive distillation process, which consumes 2.4 quad/year. A chemical composition sensor for non-aqueous applications has been developed which, if successful, could save about 0.03 quad/year based on the initial industrial field test. A Raman sensor allowing analysis of chemical compositions through steady state transitions for advanced control strategies of aqueous distillation applications is being evaluated by a second major chemical company.

Figure IV-3g.2
Program Performance Summary, INT

Feedstock flexibility for the "chemical plant of the future" is addressed by the Alternative Feedstocks' program opportunity for displacing petroleum-based feedstocks with dedicated forestry and agricultural resources for the manufacture of high-volume, non-energy chemical products. To meet the energy goal of 1 quad/year by 2030, a research, development and demonstration "pipeline" of 12 chemical products must be initiated by 2000, and be ready for commercialization by 2015. Concurrent development of higher value products using high-value chemicals from renewables will be a critical market-penetration program strategy. The initial program focus is the development of an economic process to produce succinic acid. Succinic acid has the potential to be used in the manufacture of nylon and other polymer precursors.

PULP AND PAPER

The U.S. paper and allied products industry ranks eighth among all U.S. manufacturing industries in the value of its shipments, and third among the nondurables sector in sales. The industry has traditionally been a U.S. leader in annual investment for plant and equipment, ranking in capital expenditures, according to the most recent Bureau of the Census data. The paper industry consumes some 2.75 quads annually but self-generates about 1 quad of this energy from bark, "hog" fuel (wood waste), and a recycle stream termed "black liquor." A comprehensive program plan for pulp and paper R&D was completed in FY 1994; and in response to Section 2103 of the Energy Policy of 1992, which directed a five-year program on advanced pulp and paper technologies, an aggressive program targeted to high-impact R&D in the paper industry was begun in FY 1994. The program for the "Pulp and Paper Mill of the Future" addresses the most energy-intensive process steps in a pulp/paper mill, which are chemical and mechanical pulping, chemical recovery, paper making; and sensors and controls.

Technology highlights for FY 1995 include planning and design for a 350 ton/day demonstration unit of the pulse combustion black liquor gasifier process, with near-term energy savings potential of 0.1 quad/year. Lab-scale studies will be continued to develop a process to produce anthraquinone for lignin, a pulping catalyst, that offers mid-term energy savings of 0.02 quad/year. In-plant verification of the black liquor recovery boiler model will be continued. Construction and installation of a large-scale pilot unit to demonstrate high-solids firing of black liquor will be initiated. Prototype testing at selected mill sites will be completed for a lignin

Figure IV-3g.2
Program Performance Summary, INT

fluorescence sensor, a black liquor viscometer, and an FTIR sensor for control of the Tomlinson black liquor recovery boiler. Development of a prototype on-machine sensor for control of paper properties, including plant validation studies, will be continued.

FOOD, TEXTILES, AND AGRICULTURE

The Food and Beverage industry (SIC 20) became the nation's largest major manufacturing sector in 1992, with shipments of more than $377 billion, surpassing the transportation equipment industry. Technologies in support of these industries have focused on reducing the energy utilization of energy-intensive drying processes, farm fertilizer use, and crop yields. In food and agriculture, a number of sensor developments will be completed, including in-field testing of an ammonia sensor, and field tests of a sensor to measure sucrose content of fruits. Marketing plans will be completed for the sonic temperature sensor for aseptic food processing, and the HTNMR (hydrogen transient nuclear magnetic resonance) moisture sensor for food drying.

Figure IV-3g.2
Program Performance Summary, INT

II. A. Funding Table: Process Efficiency

Program Activity	FY PYxx Enacted	FY Cyxx Enacted	FY BYxx Request	% Change
Materials and Materials Processing				
Metals Initiative	$ 17,755	$ 19,366	$ 21,923	+ 13
Process Electrolysis	1,471	1,500	2,472	+ 65
Foundries and Glass	6,312	4,500	13,386	+197
Advanced Materials	10,106	9,286	12,465	+ 34
Subtotal, Materials and Materials Processing	$ 35,644	$ 34,652	$ 50,246	+ 45
Chemicals and Petroleum Refining				
Alternative Feedstocks	$ 2,257	$ 2,780	$ 6,675	+140
Bioprocessing	5,103	5,084	4,048	- 20
Process Development	1,587	4,196	4,063	- 3
Subtotal, Chemicals and Petroleum Refining	$ 8,947	$ 12,060	$ 14,786	+ 23
Pulp and Paper	$ 5,518	$ 6,495	$ 6,750	+ 4
Food, Textiles, and Agriculture	685	635	471	- 26
Total, Process Efficiency	$ 50,794	$ 53,842	$ 72,253	+ 34

II. B. Laboratory and Facility Funding Table: Process Efficiency

Argonne National Lab (East)	$ 535	$ 977	$ 2,225	+128
Idaho National Engineering Lab	2,375	2,554	3,074	+ 20
Lawrence Berkeley Lab	850	925	799	- 14
Lawrence Livermore National Lab	170	200	235	+ 18
Los Alamos National Laboratory	2,735	2,440	2,586	+ 6
National Renewable Energy Lab	2,845	3,267	3,486	+ 7
Oak Ridge National Lab	4,585	4,648	5,577	+ 20
Pacific Northwest Lab	1,377	925	1,269	+ 37
Sandia National Laboratories	1,500	1,350	1,461	+ 8
All Other	33,822	36,556	51,541	+ 41
Total, Process Efficiency	$ 50,794	$ 53,842	$ 72,253	+ 34

Figure IV-3g.2
Program Performance Summary, INT

III. Performance Summary: (New BA in thousands of dollars)

Program Activity	FY PYxx	FY CYxx	FY BYxx
Process Efficiency			
Materials and Materials Processing			
Metals Initiative	ENERGY SAVINGS OPPORTUNITY: 0.4 quad/year total, with 0.1 and 0.2 quad/year in aluminum and iron smelting respectively, and over 0.15 quad/year in near-net-shape steel processing. ENVIRONMENTAL BENEFITS: Nitrogen Oxide production is reduced in direct ironmaking through use of oxygen rather than air for combustion of coal. COMPETITIVENESS: All processes can achieve up to 50 percent reduction in capital, with 10-20 percent labor, energy cost savings, and improved productivity. ($0)	No Activities. ($0)	No Activities. ($0)

Figure IV-3g.2
Program Performance Summary, INT

III. Process Efficiency (Cont'd):
Materials and Materials Processing (Cont'd):

Program Activity	FY PYxx	FY CYxx	FY BYxx
Metals Initiative (Cont'd)	DIRECT STEELMAKING: Installed and completed testing two-zone horizontal smelting vessel resulting in doubling of process intensity. Independent study by international engineering company confirmed process benefits compared to coke oven/blast furnace process and emerging Corex process. Completed direct ironmaking experimental program and process design manuals to support commercialization of direct iron/steelmaking. Completed pressurized smelter tests with gas cleaning and tempering loop. Completed feasibility study to define the integrated plant concept and component configuration for a demonstration plant. (AISI) ($9,235)	DIRECT STEELMAKING: Initiate and complete site-specific detailed engineering design of direct iron/steelmaking demonstration plant for 350,000 tons/year. Initiate site preparation, and procurement and fabrication of long-lead equipment (EPACT Section 2106) (AISI) ($14,100)	DIRECT STEELMAKING: Begin construction of 350,000 tons/year direct iron/steelmaking demonstration plant based on the successful results of the pilot unit campaigns and pre-reduction system developed in prior years. This plant will be installed in an existing integrated steel mill. Its production will feed directly into the mill's manufacturing line. (EPACT Section 2106) (AISI) ($9,809)

Figure IV-3g.2
Program Performance Summary, INT

III. Process Efficiency (Cont'd):
Materials and Materials Processing (Cont'd):

Program Activity	FY PYxx	FY CYxx	FY BYxx
Metals Initiative (Cont'd)	DIRECT STRIP CASTING: Established technical and economic feasibility of casting low-carbon steel sheet on a single-wheel caster, using the open channel process. Cast 0.03-.125" X 12" wide, 500-3,000 lb. on single-wheel caster. Completed casting trials and development of math model and refractory fabrication techniques. Completed work on electromagnetic containment and began material studies. (ARMCO) ($984)	DIRECT STRIP CASTING: Complete casting trials, material studies, and begin technoeconomic analysis with FY 1993 funds. (ARMCO) ($0)	No Activities. ($0)
	RAPID ANALYSIS OF MOLTEN METALS: Installed molten metal levitation facility for sensor probe to rapidly determine the chemical composition of molten iron and steel, using spectroscopic analysis of laser-produced plasmas. Continued protocol development and began refractory studies.	RAPID ANALYSIS OF MOLTEN METALS: Complete work from previous year and initiate field testing of second probe. (EPACT Section 2106) (LEHIGH) ($284)	RAPID ANALYSIS OF MOLTEN METALS: Complete field testing of second probe using funds from prior years. (LEHIGH) ($0)

Figure IV-3g.2
Program Performance Summary, INT

III. Process Efficiency (Cont'd):
Materials and Materials Processing (Cont'd):

Program Activity	FY PYxx	FY CYxx	FY BYxx
Metals Initiative (Cont'd)	Signed agreement to test first probe at a steel company. (LEHIGH) ($805) ADVANCED PROCESS CONTROL: Using funds from FY 1991 and FY 1992, initiated project for advanced process control in the steel industry. Five-year program will design, test, and commercialize selected sensors, control devices, and software for on-line control. Major elements of work are: on-line sensors to measure temperature and composition of basic oxygen furnace (BOF) offgas, temperature of the steel bath, and operating control software; an electromagnetic flow control valve to feed steel into a continuous casting mold; on-line sensors to measure the physical properties of steel strip; on-line sensors to measure the temperature, thickness and composition of zinc	ADVANCED PROCESS CONTROL: Continue pilot testing of BOF off-gas and bath temperature sensors. Begin designing prototype units for mill trials at Bethlehem Steel. Develop process control software. Complete testing of electromagnetic valve, evaluate results, and design a valve to be installed on an industrial caster. Develop computer model to predict properties of hot rolled band. Perform laboratory investigations of magnetic and laser ultrasonic sensors to determine the properties of steel strip. Fabricate and begin lab testing of sensors to determine the composition and temperature of galvanneal strip; continue physical property modeling and sensor	ADVANCED PROCESS CONTROL: Complete testing of BOF bath sensor, continue testing offgas sensor, and begin production trials of process control software. Fabricate prototype valve and perform laboratory pouring trials. Verify model from mill samples. Test magnetic sensor in laboratory and begin construction of field unit. Design laser ultrasonic sensor. Field test sensors. (AISI) ($4,320)

Figure IV-3g.2
Program Performance Summary, INT

III. Process Efficiency (Cont'd):
Materials and Materials Processing (Cont'd):

Program Activity	FY PYxx	FY CYxx	FY BYxx
Metals Initiative (Cont'd)	coatings on galvanneal, signed Financial Assistance Agreement, and issued all major subcontracts. (AISI) ($0)	work. (EPACT Section 2106) (AISI) ($3,109)	
	STABLE CATHODE: Kaiser Aluminum joined with Reynolds Metals and Great Lakes Research to complete the testing of titanium diboride/graphite stable ($400) cathode technology at their Mead, WA. facility. This technology will save 0.1 quad when retrofitted to the U.S. aluminum capacity. (Reynolds) ($708)	STABLE CATHODE: Complete field testing of stable cathodes on commercial size cells. (EPACT Section 2106) (Reynolds)	STABLE CATHODE: No Activities. ($0)

Figure IV-3g.2
Program Performance Summary, INT

III. Process Efficiency (Cont'd):
Materials and Materials Processing (Cont'd):

Program Activity	FY PYxx	FY CYxx	FY BYxx
	STEEL PLANT WASTE OXIDE RECYCLING: Began a project to determine, on a pilot scale, the feasibility of converting steel plant wastes to molten pig iron using direct steel smelting technology. The recycling of plant wastes by bath smelting would save an estimated 0.15 quad per year. Will reduce landfill requirements by 5-8 million tons/year, and	STEEL PLANT WASTE OXIDE RECYCLING: Continue smelting trials with FY 1993 funds. (AISI) ($0)	STEEL PLANT WASTE OXIDE RECYCLING: Will complete smelting trials and perform technoeconomic analysis. (EPACT Section 2106) (AISI) ($1,094)
Metals Initiative (Cont'd)	reduce dust disposal cost by up to $100 million/year. Performed studies to characterize steel mill waste products and material handling properties. Added a second wet scrubbing cyclone to the smelter. Began smelting trials on various combinations of plant wastes. (AISI) ($3,556)		

Figure IV-3g.2
Program Performance Summary, INT

III. Process Efficiency (Cont'd):
Materials and Materials Processing (Cont'd):

Program Activity	FY PYxx	FY CYxx	FY BYxx
	NEW PROJECTS: Started new Metals Initiative projects in response to unsolicited proposals and solicitations in areas defined in the Metals Initiative Research Plan, such as steel plant waste recycling, and calcination of alumina. (TBD) ($346)	NEW PROJECTS: Continue Metals Initiative projects begun with FY 1993 ($0) funds. Start new Metals Initiative projects in response to unsolicited proposals and solicitations in areas defined in the Metals Initiative Research Plan. (EPACT Section 2106) (TBD) ($1,473)	NEW PROJECTS: No Activities. (TBD)
	ALUMINUM SPRAY FORMING: Commenced bench scale work by the modification of existing equipment at the Alcoa technical center, conduct parametric studies, mathematical modeling, nozzle design, and refractory/material	ALUMINUM SPRAY FORMING: Continue work initiated with FY 1993 funds. (EPACT Section 2106) (ALCOA) ($0)	ALUMINUM SPRAY FORMING: Continue bench-scale work and evaluate the data to determine if continuation to pilot scale is appropriate. Design and begin construction of pilot plant, mathematical modeling, safety and

Figure IV-3g.2
Program Performance Summary, INT

III. Process Efficiency (Cont'd):
Materials and Materials Processing (Cont'd):

Program Activity	FY PYxx	FY CYxx	FY BYxx
Metals Initiative (Cont'd)	design. Planned and conducted bench scale studies for aluminum copper alloys and aluminum zirconium alloys, characterized the sprayed samples, and evaluated sample solidification and microstructure. Conducted/updated the energy analysis, economic analysis, and updated the capital requirements for commercialization of this technology. Reports have included documentation of as-sprayed specimens, results of solidification studies, microstructural evaluation, characterized initial as-sprayed specimens, results of the aluminum copper and aluminum zirconium study, and an initial evaluation of refractory/nozzle materials. (EPACT Section 2106) BENEFIT: Energy Savings: with spray forming, a savings of 4.2 x 10 (to the sixth power) Btu/ton of aluminum sheet produced could be saved over		industrial hygiene analysis. Characterize mechanical properties of spray deposited commercial alloys. The economic analysis will be updated for spray forming and capital requirements, investigate market potential for this technology with end users. (EPACT Section 2106) (ALCOA) ($6,700)

Figure IV-3g.2
Program Performance Summary, INT

Program Activity	FY PYxx	FY CYxx	FY BYxx
Metals Initiative (Cont'd)	processing; That is a maximum energy savings 27 percent by spray forming versus ingot casting; Environment: provides an increased recyclability of aluminum products and a reduction in waste produced in milling required for the ingot cast alloys; Economics: two cent per pound of finished sheet cost savings; acts as enabling technology for the automotive industry use of aluminum parts and panels which leads to substantial fuel savings; Jobs: increase the number of high value U.S. jobs in aluminum manufacturing and end use applications due to the economic growth provided by gaining market share and saving energy. (ALCOA) ($2,121)		
	$17,755	$19,366	$21,923

Figure IV-3g.2
Program Performance Summary, INT

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

IV. A. Construction Funded Project Summary Listing:

Project No.	Project Title	Previous Appropriations	FYPY Adjusted	FYCY Adjusted	FYBY Request	Unappropriated Balance	TEC
GPP-600	General Plant Projects						
95-F-601	Upgrade to METC Bldg. B-4		[a]				a/
94-F-601							
Total:							
Total Number of Line Items							

[a] Funds reprogrammed from line-item project 92-F-603, reprogramming number.

Figure III-3g.2
Program Performance Summary, INT

IV. B. Construction Funded Project Descriptive Summary

1. Project Title and Location — Project GPP-600 General Plant Projects, Various Locations — TEC: N/A

   Start Date: 1st Qtr. FY 1997 — Completion Date: 4th Qtr. FY 1997

2. Financial Schedule (Federal Funds):

Fiscal Year	Appropriation	Adjustments	Obligations	Costs
1993				
1994				
1995				
1996				
1997				
1998				

3. Narrative:

These projects provide various items of new construction, additions, alterations, and improvements to buildings, and utility systems at Energy Technology Centers and the Bartlesville Project Office in support of environmentally safe and efficient program operations.

Figure III-3g.2
Program Performance Summary, INT

h. Program Direction. Conference Report 104-293 accompanying the FY 1996 Energy & Water Development (EWD) Appropriations Bill (H.R. 1905) requires that each organization have one program direction line within each appropriation account for all Full-Time Equivalents (FTEs), both field and headquarters. The Conference Report
* language also requires that object class information be provided. The FY 1998, EWD
* Appropriation Bill Committee Report (H.R 105-190) clarified that all support services
* contracts are to be included in the program direction account regardless whether the
* contracts are in support of the program mission or Federal FTEs. To comply with these reporting requirements, all EWD funded programs are must prepare and submit Figures IV-3h.1 through 3h.3 according to the guidance provided below.

(1) **Program Performance Summary (Figure IV-3h.1)**.
A separate Program Performance Summary shall be prepared for program direction funding for each appropriation with an organization. For example, the Office of Energy Research must submit to two Program Funding Profiles, one for Energy Supply Research and Development, and the other for General Science and Research Activities. The standard format for the Program Performance Summary has been slightly modified for reporting program direction activities.

Section I has been retitled "Mission Supporting Goals/Ongoing Responsibilities." This section should describe the purpose of the program direction line and also describe any activities funded under the following four categories: Salaries and Benefits, Travel, Support Services, and Other Related Services. All funding associated with program direction must be reported in one of the four categories. Definitions for these categories are provided at the end of this section.

Section II - "Funding Table" has been modified to report program direction funding and Full Time Equivalents (FTEs) by site by the four categories (Salaries and Benefits, Travel, Support Services, and Other Related Services) for each of the three fiscal years (PY, CY, BY). Area and Support Offices should be included under the cognizant Operations Office. For example, the Argonne, Brookhaven, Princeton Area Offices, and the Chicago Support Office should be included under Chicago Operations Office. The "Other" site category should be used only for those sites that are not associated with the Operations Offices listed in the Funding Table.

The last group of entries on the table displays total program direction funding and FTEs for the organization. An adjustment line shall be used to reflect general reductions, and the use of any prior year balances in any of the fiscal years. The amount in the adjustment line is then subtracted from the organization's total line to calculate new budget authority. The adjustment

column should be used to reflect any actual budget adjustments such as approved reprogrammings, distribution of general reductions, or rescissions.

A detailed backup schedule is required for any program direction funding and FTEs reported under the "Other" sites section. This schedule should list the specific site(s) included as well as the associated program direction funding and FTEs. This "Other" sites backup summary should follow the same format as the Section II "Funding Table."

Section III - During the "lessons learned' meeting with EWD committee staff on the FY 1997 Congressional Budget Request, staff noted that the "Performance Summary" section was not very helpful because it simply described many of the obvious ongoing activities that are funded in program direction (e.g., "provide personnel compensation including salaries and benefits for 310 full-time equivalents"). Committee staff directed the Department to condense this section to describe those activities that readily are quantifiable and substantively justify the need for federal staff and the resources to support such staffing levels. Therefore, organizations should take care to identify and describe oversight/management activities performed and the programmatic problems that could occur in the absence of DOE oversight/management. Describe if the program is staffing up or down, reducing or increasing support service contracts or working capital activities, by how much and why. Explain if severance or voluntary separation incentive payments are being funded, including the number of FTEs affected and the estimated cost.

Section IV - "Explanation of Funding Changes from FYCY to FYBY" should be explained in terms of total category levels (i.e., Salaries and Benefits, Travel, Support Services, and Other Related Costs) for the organization as well as for specific sites. Net changes in categories should be broken out by the specific increases or decreases of subordinate activities.

(2) **Detailed Support Services Schedule (Figure IV-3h.2)**
Organizations that fund support service contracts are required to prepare and submit a detailed breakout of such contracts. The schedule should be prepared
* according to the definitions provided below. All support services are to be
* included in this schedule.

(3) **Detailed Other Related Expenses Schedule (Figure IV-3h.3)**
Organizations are required to prepare and submit a detailed breakout of other related expenses. This schedule should be prepared according to the definitions provided below.

Definitions of Program Direction Categories:

Salary and Benefits - (Object Class categories 11.1 through 13.0)
Salary includes compensation for regular salaries and wages paid directly to civilian full-time permanent and other than full-time permanent employees, other payments that become a part of the employee's basic pay rate (e.g., geographic differentials and nationwide pay raises) and other personnel compensation such as overtime, holiday pay, Sunday pay, and cash incentive awards.

Benefits includes cash allowances for relocation and other expenses related to permanent change of station (PCS) and payments to funds for the benefit of employees. Such payments include the
* employer's share of employee retirement, health and life insurance, accident compensation,
* Federal Insurance Contribution Act taxes, and Federal Retirement Thrift Savings Plan. Also, includes payments to subsidize the costs of civilian employees in commuting by public transportation.

Benefits also includes payments for former employees such as severance pay to employees involuntarily separated, and voluntary separation incentives. Includes payments to the unemployment fund, payments of 9 percent of final basic pay to the civil service retirement fund for employees who took the early-out or buy-out authority, and payments to the Employees health benefits fund for annuitants.

Travel - (Object Class categories 21.0 and 22.0)
Travel includes funding for the transportation of Government employees, their per diem allowances while in authorized travel status, and other expenses incidental to travel that are to be paid by the Government either directly or by reimbursing the traveler. Travel also includes transportation of things, for the care of such things while in process of being transported, and for other services incidental to the transportation of things. An example, would be the transportation of household goods related to permanent change of station (PCS).

Support Services - (Object Class category 25.1)
As a part of the Strategic Alignment Initiative, support services were grouped into the following two categories below. The format for displaying detailed information on support services is shown in Figure III-3h.2.

(1) *Technical Support Services* - includes funding for services which include, but are not limited to, determining feasibility of design considerations; development of specifications, system definition, system review and reliability analyses; trade-off analyses; economic and environmental analyses which may be used in the Department of Energy's preparation of environmental impact statements; test and evaluation, surveys or reviews to improve the effectiveness, efficiency and economy of technical operations.

Management Support Services - includes funding for services which include, but are not limited to, analyses of workload and work flow; directives management studies; automated

data processing; manpower systems analyses; assistance in the preparation of program plans; training and education; analyses of Department management processes; and any other reports or analyses directed toward improving the effectiveness, efficiency and economy of management and general administrative services.

Questions on the definition of support services should be directed to the contact listed in the Point of Contact Matrix provided at the front of this chapter.

Other Related Expenses - (Object Class categories 23.1 through 24, 25.2 and 25.3, 25.7, 26.0, and 31.0) Other Related Expenses includes all program direction costs not reported under Salaries and Benefits, Travel or Support Services. The format for displaying other related expenses is shown in Figure III-3h.3. Specifically, this category includes payments for rental space, telecommunications, utilities and miscellaneous charges, printing and reproduction, operation & maintenance of equipment, purchases of goods and services from government accounts, supplies and materials, and equipment.

The rates charged to Headquarters programs to finance common administrative services through the Working Capital Fund are included in this category and should be budgeted for in object class 25.3 since they are intra-agency reimbursable costs. Similarly, landlord activities (rents, utilities, telecommunications, supplies, etc) in support of field sites and GOGOs are also included "other related expenses."

DEPARTMENT OF ENERGY
FY BY CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY, RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands, Narrative in whole dollars)

OFFICE OF ENERGY RESEARCH PROGRAM DIRECTION

I. Mission Supporting Goals/Ongoing Responsibilities:
Program direction provides overall direction and administrative support for Energy Research programs to ensure that all operations are conducted in the most efficient manner consistent with national science and technology policy....

Program direction has been grouped into four categories:
Salaries and Benefits provides for .....

Travel.....

Support Services.....

Other Related Expenses.....(explain Headquarters Working Capital Fund costs and any landlord responsibilities in the field)

II. Funding Table:

	FY PY Current Appropriation	FY CY Original Appropriation	FY CY Adjustments	FY CY Current Appropriation	FY BY Budget Request
Chicago					
Salary and Benefits	5,371	4,380	0	4,380	4,000
Travel	386	350	0	350	300
Support Services	254	204	0	204	180
Other Related Expenses	461	460	0	460	460
Total	$ 6,472	$ 5,394	$ 0	$ 5,349	$ 4,940
Full Time Equivalents	65	54	0	54	49
Oakland					
Salary and Benefits	162	165	0	165	165
Travel	15	15	0	15	15
Support Services	0	0	0	0	0
Other Related Expenses	10	59	0	59	59
Total	$ 187	$ 239	$ 0	$ 239	$ 239
Full Time Equivalents	2	2	0	2	2

Figure IV-3h.1
Program Direction Performance Summary, EWD

II. Funding Table: (continued)

	FY PY Current Appropriation	FY CY Original Appropriation	FY CY Adjustments	FY CY Current Appropriation	FY BY Budget Request
Other*					
Salary and Benefits					
Travel					
Support Services					
Other Related Expenses					
Total	$	$	$	$	$
Full Time Equivalents					
Headquarters					
Salary and Benefits	27,725	26,635	0	26,635	26,000
Travel	1,545	1,500	0	1,500	1,400
Support Services	2,470	2,370	0	2,370	2,300
Other Related Expenses	5,305	6,016	0	6,016	5,900
Total	$37,045	$36,521	$ 0	$36,521	$ 35,600
Full Time Equivalents	273	254	0	254	248
Total Energy Research					
Salary and Benefits	33,258	31,180	0	31,180	30,165
Travel	1,946	1,865	0	1,865	1,715
Support Services	2,724	2,574	0	2,574	2,480
Other Related Expenses	5,776	6,535	0	6,535	6,419
Grand Total	$43,704	$42,154	$ 0	$42,154	$ 40,779
Full Time Equivalents	340	310	0	310	299
Adjustments	-704a/				
Budget Authority	$43,000	$42,154	$ 0	$42,154	$ 40,779

a/ Use of prior year balances

* If the "Other" category is used, a detailed backup schedule must also be submitted that lists the specific sites included.

Figure IV-3h.1
Program Direction Performance Summary, EWD

III. **Performance Summary:**	FYPY	FYCY	FYBY
Salaries and Benefits: - Streamlined organizational elements by eliminating four (third-tier) components (three in HQ and one at CHO) in FY 1997 and expect to consolidate several second-tier organizations at headquarters in FY 1998. Staffing was correspondingly reduced by 5 FTEs in CHO and 6 FTEs in HQ. Federal staff conducts independent peer reviews for approximately 300 projects in Energy Research, Fossil Energy and Energy Efficiency to determine quality of the science and its relevance to DOE's mission and the national science objectives. These energy projects may be curtailed somewhat due to reductions in other DOE research budgets. Federal staff reviews and implements nuclear safety requirements contained in the Price Anderson Amendment Act of 1988. Staff prepares policy and plans for laboratory infrastructure management as required by the Energy Policy Act of 1992, and prepared the science and technology sections of the National Energy Policy Plan.	$33,258	$31,180	$30,165
Travel: Instituted travel ceilings in accordance with Secretarial initiative to accomplish a reduction in travel costs. Teleconferencing was increased and the numbers of Federal staff reduced who had previously traveled for management and oversight purposes, primarily oversight of the Nntional laboratories.	$ 1,946	$1,865	$1,715
Support Services: Conducted training in FY FYPY for 68 FTEs for use of the new Energy Research wide area network (WAN) for more efficient transfer of science data between Headquarters and Field. Will train 52 FTES for use of the WAN in FYCY, and 45 FTEs in FYBY.	$2,724	$2,574	$2,480
Other Related Expenses: FYCY funding supports the purchase of a replacement copier at CHO, a scanner and two computer printers at ORO, and eight replacement personal computers at Headquarters. In FYBY, support for infrastructure at both Headquarters locations was reduced commensurate with lower staffing levels. The FYCY and FYBY estimates include $,4554,000 and $4,600,000 respectively, to cover Headaquarters Working Capital Fund chargres.	$5,776	$6,535	$6,419

IV. Explanation of Funding Changes from FY CY to FY BY:

Decrease of $1,015,000 in Salaries and Benefits is due to a Headquarters and CHO FTE reductions.	-$1,015,000

Figure IV-3h.1
Program Direction Performance Summary, EWD

IV. Explanation of Funding Changes from FY CY to FY BY:

Decrease of $150,000 in Travel is consistent with Secretarial strategic alignment initiative.	- $150,000
Decrease of $94,000 in Support Services is due to the anticipated budget reductions in DOE research areas in FY 1998.	-$94,000
Net decrease of $116,000 is due to a decrease of $162,000 for infrastructure at Headquarters locations commensurate with lower staffing levels and an increase of $46,000 due to increased costs of printing services to be purchased through the DOE Working Capital Fund.	-$116,000
Total	-$1,375,000

Figure IV-3h.1
Program Direction Performance Summary, EWD

Support Services	**FY 19PY ($000)**	**FY 19CY ($000)**	**FY 19BY ($000)**	**FY 19BY/FY 19CY Change ($000)**
Technical Support Service				
Feasibility of Design Considerations	$xxx	$xxx	$xxx	$xxx
Economic and Environmental Analysis	xxx	xxx	xxx	xxx
Test and Evaluation Studies	xxx	xxx	xxx	xxx
Subtotal	$xxxx	$xxxx	$xxxx	$xxxx
Management Support Services				
Management Studies	xxx	xxx	xxx	xxx
Training and Education	xxx	xxx	xxx	xxx
ADP Support	xxx	xxx	xxx	xxx
Subtotal	**xxx**	**xxx**	**xxx**	**xxx**
Use of Prior-Year Balances	xxx	xxx		
Total Support Services	**$xxxx**	**$xxxx**	**$xxxx**	**$xxxx**

Figure IV-3h.3
Other Related Expenses Schedule, EWD

Other Related Expenses	**FY 19PY ($000)**	**FY 19CY ($000)**	**FY 19BY ($000)**	**FY 19BY/FY 19CY Change ($000)**
Training				
Working Capital Fund	xxx	xxx	xxx	xxx
Printing and Reproduction	xxx	xxx	xxx	xxx
Rental Space	xxx	xxx	xxx	xxx
Software Procurement /Maintenance Activities/Capital Acquisitions	xxx	xxx	xxx	xxx
Other	xxx	xxx	xxx	xxx
Subtotal	**$xxx**	**$xxx**	**$xxx**	**$xxx**
Use of Prior-Year Balances	xxx	xxx		
Total	**$xxxx**	**$xxxx**	**$xxxx**	**$xxxx**

Figure IV-3h.3
Other Related Expenses Schedule, EWD

i. Capital Operating Expenses & Construction Summary: This schedule, an expansion of section IV.a. of the old Key Activity Summary format, is required by all EWD funded organizations that fund construction and/or capital related items (see Figure IV-3i). It summarizes all construction and capital-related operating expenses **at the program level for all three fiscal years**. Capital Operating Expenses include capital equipment (CE), General Plant Projects (GPP), most Accelerator Improvement Projects (AIP), and project related costs. Project related costs are conceptual design reports (CDR) and other project-related costs funded from operating expenses such as research and development, preparation of design criteria, safety analyses, and environmental documentation prior to project authorization.

(1) The Capital Operating Expenses and Construction Summary schedule must separately list the total funding amounts for CE, GPP, AIP, project related costs, and each line-item construction (both operating & expense-funded) project by fiscal year. The Capital Operating Expenses section will include two additional columns that reflect the dollar and percentage from FY CY to FY BY. The Construction Project Summary section will include three additional columns to provide Total Estimated Cost (TEC), Previous Appropriated, and Unappropriated Balance data. Organizations are reminded that the Department increased the capitalization threshold to $25,000 as of October 1, 1996.

(2) **Detailed Breakouts for CDR, Other Project-Related Costs, & Major Items of Equipment costs**: To comply with the National Defense Authorization Act for FY 1996, **CDR** and Other Project-Related Costs (operating expense funded) estimated to exceed $3 million must be separately identified by project in the detailed breakout section of the Capital Operating Expenses and Construction Summary.

Major Items of Equipment (MIE) must also be separately identified in the detailed breakout section provided. Organizations are reminded that the funding threshold for MIE is $2 million.

SAMPLE FORMAT

BIOLOGICAL AND ENVIRONMENTAL RESEARCH
CAPITAL OPERATING EXPENSES & CONSTRUCTION SUMMARY
(Dollars in thousands)

Capital Operating Expenses	FY PY	FY BY	FY CY	$ CHG.	% CHG.
GPP (total)	$ 3,500	$ 4,450	$ 4,450	$ 0	0%
AIP (total)	1,200	1,275	1,350	75	6%
Capital Equipment (total)	24,540	24,000	24,000	0	0%
Project Related Costs					
1 CDRs (enter total amount from page two)					
2 Other Project-Related Costs (enter total amount from page two)					

Construction Project summary (both Operating and Construction Funded)

Project Number	Project Title	TEC	Previous Approp.	FY PY Approp.	FY CY Approp.	FY BY Request	Unapprop. Balance
94-E-339	Human Genome Laboratory, LBL	$ 24,634	$ 2,134	$ 15,800	$ 5,700	$ 1,000	$ 0
94-E-338	Structural Biology Center, ANL	14,876	3,881	6,700	4,295	0	0
94-E-337	ALS Structural Biology Support Facilities, LBL	7,882	582	4,700	2,600	0	0
94-E-335	BLIP Facility Upgrade	5,821	5,821	0	0	0	0
91-EM-100	Environmental Molecular Sciences Lab., PNL	207,900 a/	82,787	40,000	50,000	35,113	0
Total Construction		$ 261,113	$ 95,205	$ 67,200	$ 62,595	$ 36,113	$ 0

a/ $28,500,000 FY 1993 funding provided by Environmental Management Program.

Figure IV-3i
Capital Operating Expenses & Construction Summary

SAMPLE FORMAT

CAPITAL OPERATING EXPENSES & CONSTRUCTION SUMMARY - BER (Cont'd)

Detailed Breakouts

CDRs - Exceeding $3 Million	Total CDR Cost	Previous Approp.	FY PY Approp.	FY CY Approp.	FY BY Request	Comp. Date
1 Project Title/Site #1	$	$	$	$	$	
2 Project Title/Site #2						
3 Project Title/Site #3						
Total (enter amount on page one)						

Other Project-Related Costs (Op. Exp. Funded) Exceeding $3 Million	Previous Approp.	FY PY Approp.	FY CY Approp.	FY BY Request
1 Project Title/Site #1: R & D, Environmental Doc.	$	$	$	$
2 Project Title/Site #2: Safety Analyses				
3 Project Title/Site #3: Environmental Doc., Safety Analyses				
Total (enter amount on page one)				

Major Items of Equipment (CE $2 Million and Above)	TEC	Previous Approp.	FY PY Approp.	FY CY Approp.	FY BY Request	Acceptance Date
1 MIE #1	$	$	$	$	$	
2 MIE #2						
3 MIE #3						
Total						

Figure IV-3i
Capital Operating Expenses & Construction Summary

j. Comparability Matrix. This matrix summarizes all approved comparable transfers at the decision unit level of detail. A comparability matrix should be prepared for all approved transfers. Stub column entries should reflect the decision unit structure used in the FYPY and FYCY revised President's budgets. Column headings, across the matrix, should represent the approved FYBY budget structure. Dollar entries (in thousands) should indicate comparability transfers of funds from the FYPY and FYCY structures to the FYBY structure. **Separate schedules should be prepared for FYPY and** FYCY Amounts must be consistent with the control tables provided by the Office of Budget (Decision Unit Table and Comparability Transfer Table). A sample format for the FYBY Comparability matrix is provided in Figure IV-3j.

Sample Format

DEPARTMENT OF ENERGY
FY 19BY CONGRESSIONAL BUDGET REQUEST
Organization Name
(dollars in thousands)

FY 19BY COMPARABILITY MATRIX

Program/Appropriation **NEW STRUCTURE**

FY 19CY CURRENT STRUCTURE	FY 19BY CONG Request Decision Unit FY 19CY Enacted Budget Decision Unit	Buildings and Community Systems	Industrial	Transportation	Multi-Sector	General Management	Program Support		Total
	Buildings and Community Systems	41,121					217		41,338
	Industrial		31,275	500			150		31,925
	Multi-Sector				23,242		100		23,342
	Policy and Management					550	1,177		1,727
	Total	41,121	31,275	500	23,242	550	1,644		98,332

NOTE: Reflect only those decision units where a comparability adjustment occurred. All funding for those decision units should be reflected in the totals.

Figure IV-3j
Example of Comparability Matrix

k. Project Data Sheets.

(1) General.

(a) Project data sheets are required to explain and justify to Congress the need for real property capital improvements regardless of the funding source (operating or construction expense). They are the primary documents used to defend funding for construction projects throughout the budget
* formulation process. Also, data from the Project Data Sheet will be used in
* conjunction with the OMB A-11 Project Status to meet performance
* reporting requirements of the Federal Acquisition Streamlining Act
* (FASA) Title V and OMB A-11, Part III, Planning, Budgeting and
* Acquisition of Capital Assets. Project data sheets shall be developed and submitted for new project efforts and for any ongoing projects which require congressional authorization and/or appropriation in the budget fiscal year.

* (b) Project data sheets contain cost and schedule baseline data necessary to
* support funding the project. The data sheet includes a Preliminary Baseline
* Estimate, Title I Design Baseline, and Current Baseline. These baselines
* estimates are established based upon the projects Total Estimated Cost
* (TEC). The Total Project Cost (TPC) is not used to establish cost and
* schedule baselines. A Preliminary Baseline is established when
* construction project funds are requested based on the conceptual design
* report and will be reported throughout the life of project. The Title I
* Design Baseline (TEC) represents the official baseline for the project. It is
* established after completion of Title I Design work and will be used during
* the life of the project to comply with annual performance reporting
* requirements contained in FASA Title V, and OMB A-11. The Current
* Baseline represents the Department's latest approved baseline.
*
* (c) Project data sheets present the description, justification, and cost data for
* all construction projects **that exceed the dollar threshold of $5,000,000.**
*

(d) Include in the TEC of a construction project all costs in connection with the addition and/or retirement of plant and equipment (including transferred equipment and materials), land, improvements to land, buildings (including permanently attached equipment), utilities, and initial movable equipment, such as machine tools, laboratory and office furniture, and equipment, necessary to outfit a building or group of buildings for operation. Exclude initial stocks of spare parts or other materials and supplies which are initially chargeable to inventories.

(e) Each project shall be assigned to the appropriate organizational component.

(2) Project Accounting Requirements.

(a) All new projects must proportionately share site overhead/landlord cost. It is important that project cost estimates include and reflect this full proportionate share of these indirect costs. Construction projects started after FY 1994 are affected by the following guidance:

> Cost Accounting Standards require that indirect costs be allocated to cost objectives in reasonable proportion to the causal and beneficial relationship of these costs to cost objectives. For purposes of allocating indirect costs to DOE construction/capital projects, this would mean that (in addition to fringe and organizational burden) an equitable share of all general and administrative and other site wide common support activities would be charged to all cost objectives, regardless of the type of funding. In most, if not all, instances, this would result in the application of the same overhead/indirect rate to both operating and construction/capital projects. However, this does not preclude the use of a different rate if there are cost centers/costs which are material and do not have a causal and beneficial relationship to construction/capital projects.

(b) The budgets for operating expenses (OE), plant acquisition and construction (PL), and capital equipment not related to construction (CE) should be prepared so as to be consistent with the accounting treatment as prescribed in DOE O 534.1 and the DOE Accounting Handbook, Chapter 10, PLANT AND CAPITAL EQUIPMENT, Section 1. INTRODUCTION, Paragraph 1.d. Capitalization Criteria. DOE capitalization criteria requires that all property, plant and equipment with an initial acquisition cost of $25,000 or more and an estimated service life of two years or greater shall be capitalized and reported in the financial statement. Below are guidelines to be used in simplifying the determination as to where the acquisition of land, facilities, or equipment should be budgeted:

> 1 Items of capital equipment for which the Department will retain title, which cost $25,000 or more, have an expected service life of two years or more, and are not required to complete a construction project, shall be budgeted for as capital equipment not related to construction.

2 Items of capital equipment not related to construction required for experimental projects shall be budgeted from operating expenses if it is expected that the equipment will be destroyed during the experiment or will have no further value other than scrap upon completion of the experiment.

3 Budget plant and capital equipment funds for the following:

a All land acquisition (fee or easement).

b All constructed facilities and capital equipment necessary to provide a complete and operable facility.

c Exception. Facilities or equipment which meet the definition of research and development, and which normally have an estimated life of less than three years, may be budgeted for as operating expenses. Regardless of the budget source or classification of funds, R&D facilities and equipment that meet the capitalization criteria shall be capitalized.

(c) The leasing of facilities and equipment is permissible when it is in the best interest of the Government to do so.

1 Lease With Option to Purchase. When a lease contains an option to purchase, the lease payments may have to be capitalized.

2 Lease Purchase Agreements. Agreements which provide for transfer of title at the end of the lease term or for the transfer of title by exercise of an option at a nominal sum unrelated to the value of the property at the time the option is exercised, are considered installment purchases. Such installment purchases have to be capitalized.

(3) Preparation of Project Data Sheets.

(a) DOE is required by law to obtain Congressional authorization for the appropriation of funds. Insofar as practical, the development and review of the project to be submitted to the Congress for authorization will be undertaken as an integral part of the regular budget process, both internally and through OMB. Project data sheets shall be prepared and submitted for all projects requiring authorization or appropriation in the budget year.

(b) A data sheet should be an objective document written from the standpoint of the Department as a whole rather than as one segment of the Department. Personal pronouns, building and area numbers, identification of staff personnel, and unsubstantiated value judgements should not be used. A data sheet should be self-sufficient. It should avoid the use of technical terms that have a special connotation in industry or science, and should not depend on the reader having access to other documents.

(c) The scope of the project shall be set forth in the data sheets in detail sufficient to permit a careful review and evaluation of the project. The data sheet items should not, however, be stated so precisely as to preclude the exercise of appropriate latitude by the manager in the actual design and construction of the project, as described in the data sheet, after authorization and appropriation of the funds.

(d) Project data sheets are to be prepared as illustrated in Figures IV-3k.1, Significant Changes and IV-3k.2, Project Data Sheet. These examples are for illustration purposes and the amount of space or length required should be adjusted for full presentations under each section. The examples contain all the data elements required in actual project descriptions.

1 A project data sheet shall be submitted for each new plant or facility and for each addition involving the construction, modification, or
* improvement which is estimated to cost $5,000,000 or more. Project
* data sheets for "Operating Expense Funded" projects with a total
* estimated cost of $5 million or more shall also be prepared. Capital
* projects costing less than $5,000,000 shall be requested and funded
* as GPP.

2 Data sheets for the multiprogram general purpose facilities program will be submitted for those projects selected by the multiprogram general purpose facilities review committees.

3 The construction of a number of similar or related units, under a specific program, may be submitted on a consolidated basis as a single project, i.e., the construction of a group of facilities for a specific reactor. Consolidated project data sheets shall identify subprojects as follows:

a Separate subprojects shall be used to identify items that are not at a single location.

b Separate subprojects shall be identified for items at the same location that require separate Architect and Engineering (A-E) work or where funding will be the responsibility of different decision units, or that have construction activity start or end dates in different fiscal years.

c Project data sheet for a consolidated project will identify as subprojects items that would have required designation as a subproject based on the criteria of subparagraph j(3)(d)3 b above when changes in the funding, schedule, or actual performance dictate.

(e) An additional line in the Heading will follow the fiscal year and budget cycle identification line if Projects transmitted in the last budget to Congress have changed data or text.

1 The Decision Unit title that the Project supports will be shown in the Heading. If the Decision Unit title is subordinate to a Program title, the Program title (and any additional intervening titles) will be shown above the Decision Unit title.

2 Continuation information will be included on every page after the first page. The designation (Continued) will be appended to all continuation information.

a The Heading will appear only on the first page.

b A two line identification consisting of Section 1. and 2. with a top and bottom ruler will be on every page after the first.

c The Section Number and Section Title and Subsection letter and Subsection Title will be the first line after the project continuation identification.

3 The Heading in the Significant Changes Sheet is identical to that in the Project Data Sheet with the exception of the line indicating that changes from the last Congressional submission have a redline. The Significant Change Sheet should contain only changes from the previous submission to the Congress that are **significant**. If needed, the heading will include the notation that tabular dollars are in thousands and narrative material is in whole dollars.

(f) In even numbered budget years, Projects funded from the National Defense Budget Function (050) will append data for the BY+1 in brackets (for example, the budget year 1998 request will show: FY 1998/[FY 1999] for column headings and $xx,xxx [$zz,zzz] for dollar amounts). However, brackets will not be used in the Heading.

(g) Information for Strategic Systems projects will be in agreement with the project plan baseline document. Only directed changes (i.e., directed by Congressional action) or Energy Systems Acquisition Advisory Board (ESAAB) approved changes are to be identified.

(h) For Environmental Restoration (EM-40) projects under the Assistant Secretary for Environmental Restoration and Waste Management, the following definitions shall apply for each MSA unless a different precedent has been established:

1 Total Estimated Cost (TEC): This term will not be used for EM-40 projects.

* 2 Total Project Cost (TPC): The cost included in the most current EM
* Long-Term Plan (Focus on Year 2006) or in an approved Baseline Document which sums all previous costs plus projected costs for the next five fiscal years. The TPC shall include all associated Other Project Costs for this period. If certain projects which extend beyond the EM Long-Term Plan have approved baselines in place, they shall be used in their entirety.

(i) Significant changes (full-funding policy, project or subproject TEC, TPC, construction end date, or scope adjustments) are to be clearly identified.

1 Project changes between the present Project Data Sheet and the Project Data Sheet transmitted in the last budget to Congress will be explained in Item 8.

2 Figure IV-3k.1a summarizing the major changes to a Project Data Sheet will be placed in front of the Project Data Sheet. The explanation of changes in Figure IV-3k.1a should be limited to a single page. Any more extensive explanation of the changes should be placed in Item 8.

3 **All elements of the project description (Item 8 of the Project Data Sheet) that have been added, deleted, or modified since the**

last budget to Congress will have a "Redline indicator" (a vertical line in the left margin).

(j) Footnotes should be used sparingly. Do not footnote within the text. It is distracting to have to leave the text to read the footnote. Include all necessary discussion in the text. Project TEC, TPC, and completion date require explanations in the narrative of Item 8 of the Project Data Sheet. Thus, footnotes on these three categories elsewhere are redundant and may be inconsistent.

(k) The following detailed instructions govern the preparation of project data sheets, Figure IV-3K.2a-2c:

1 **Item 1**, Title, and Location of Project.

a Each project title must be unclassified.

b Project titles shall be sufficiently short and descriptive to permit ready reference and shall not be changed after a project number has been assigned.

c In typing project titles, an initial capital letter shall be used for the first word in the project title and for proper names.

d The location of the project shall be given. For consolidated project data sheets at more than one location, the term Various Locations shall be used. Do not show the predominate location in such cases.

e The funding program decision unit is indicated in the data sheet header. If the project is under consideration by more than one program, identify alternate funding programs in Item 1.

2 **Item 2a and 2b**, Project Number and Funding Type. New project numbers shall be issued by the Budget Operations Division (CR-13) for new projects in each budget year, showing the year, the organization, and the sequential number of the project which also indicates appropriation for organizations with multi-appropriations. Project numbers shall be assigned soon after receipt of data sheets at Headquarters. Only properly assigned numbers shall be used to identify projects. The type of funding for the project, either Operating Expense or Construction, will be shown in item 2b.

3 **Items 3a and 3b**, Date A-E Work Initiated (Title I design start scheduled) and A-E Work (Title I and II) Duration. Insert the fiscal quarter and year in which A-E work for Title I design began or is to be initiated and the duration of Title I and II design in months. Do not assume "start" of a budget year project prior to the start of FYBY. The most realistic dates possible should be shown based on the status of conceptual work, assuming availability of funds at the beginning of the budget year. Enter the date under the Preliminary Baseline Schedule. When Title I Design work is complete, enter Title I Design Baseline date and enter the same date under the Current Baseline. The Preliminary Baseline Schedule date and the Title I Design Baseline date will not change. All subsequent date changes will be shown under the Current Baseline. For EM-40 projects only, items 3a and 3b should be titled "Date Assessment Phase Initiated" and "Duration of Assessment Phase" correspondingly.

4 **Items 4a and 4b**, Date Physical Construction Starts and Ends. Insert the date (fiscal quarter) construction activity started or is to be initiated and date which construction activity is expected to be completed. These dates shall be the earliest start date and the last completion date of all subprojects identified. Include dates for physical construction start and end, beneficial occupancy, completion of final punch list, and operational start dates in Item 8 below. This date will be shown under the Preliminary Baseline Schedule. When Title I Design work is completed, enter Title I Design Baseline date and enter the same date under the Current Baseline. The Preliminary Baseline Schedule date and the Title I Design Baseline date will not change. All subsequent date changes will be shown under the Current Baseline. For EM-40 projects only, items 4a and 4b should be titled "Date Cleanup Phase Starts/Started" and "Date Cleanup Phase Ends" correspondingly.

5 Item 5, Total Estimated Cost (TEC). Insert Federal total estimated cost (TEC). Escalation factors approved by the Office of Projects and Fixed Asset Management will be used in preparation of project cost estimates. EM-40 projects shall enter see TPC for TEC. Projects that are funded Title I & II Design only should be footnoted as shown in Figure IV-2ka.

a Preliminary Baseline Estimate. The preliminary TEC baseline estimate is based upon the CDR and will be shown through the completion of the project.

b Title I Design Baseline. When Title I Design is completed show TEC for Title I Design Baseline and TEC for Current Baseline. The Title I Design Baseline date will not change. The TEC baseline is used for FASA Title V performance reporting to OMB and Congress, **not the TPC**.

c Current Baseline. All approved changes will be shown under the Current Baseline which is the latest approved baseline.

6 **Item 6**, Total Project Cost . Insert the current Federal total project cost (TPC). Although the TPC will be shown under the Preliminary, Title I Design, and Current Baseline Estimates, the TPC shall not be used for baselining and performance reporting. Projects that are funded Title I & II Design only should be footnoted as shown in Figure IV-2ka. TPC is further described in Item 12 (a). For projects that contain subprojects, the TEC shall be the sum of the TEC for all subprojects less any Non-Federal contribution(s). EM-40 projects shall enter see TPC for TEC.

7 **Item 7**, Financial Schedule. OMB has changed its approach regarding the full funding of fixed assets. This year OMB has directed that capital projects be fully funded by using incremental budget authority for the budget year plus advance appropriations for the outyears necessary to fully fund current and proposed construction projects. Obligations in the budget year and outyears shall equal the amount of appropriations that would have been requested if the incremental funding policy were still in place. The request for advance appropriations must be written in the appropriation language which funds the project.

Projects that are phase funded (e.g., Title 1 & II Design, and Construction), will display funding in the financial schedule by design and construction phases. The preliminary baseline estimate (TEC) will be used for the Finance Schedule until completion of Title I design. Afterwards, the Financial Schedule will be changed to reflect the Title I design baseline TEC or Current Baseline Estimate TEC if it is difference from Title I Design.

The tabulation should be consistent with the project schedule dates as shown in Items 3a, 3b, 4a and 4b. The total of the appropriation plus adjustments columns, the obligations column, and the costs column shall be equal and agree with the TEC in Item 5, “Current Baseline Estimate.” Financial schedules should reflect all Federal funding for

the project from its beginning and must be reconciled to the Departmental Primary Accounting System (DPAS) i.e., Financial Information System (FIS) and Funds Distribution System (FDS).

a Section 7 of Figure IV-3k.2 is an example of a financial schedule as required for all projects.

b The FIS Plant History report only provides a total of five year segments (four individual years previous to the current execution year and an aggregate amount for all other years) thus, amounts for years earlier than the budget year minus 6 years (BY-6) are combined.

c The Appropriation and Adjustments columns for all past years and the current execution year must be identical to the Office of Budget FDS Base Table amounts for the Project.

d Footnotes must be shown for all amounts in the Adjustments column. A reference to a reprogramming must identify the Office of Budget Reprogramming Number. Other adjustments must cite the authority (supplemental or rescission, the Public Law; deferral, the Presidential deferral number; etc.). If multiple adjustments occurred in a year, the footnote must list the individual amounts and authorities. Additionally, do not footnote the year, place the footnote on the amount being explained.

e The Obligations and Costs columns for all past years must be identical to the FIS Plant History Report amounts. The obligations column for the current execution year will be identical to the latest FDS Approved Funding Program (AFP) amount.

f The current execution year Obligations and Costs will be in agreement with the approved baseline for Strategic Systems projects.

8 **Item 8**, Project Description, Justification and Scope. This item should state clearly and concisely the essential features of the project, indicating whether it is a new facility, modification of existing facilities, or addition to existing facility. The justification shall state how this project ties to the DOE (or program) Strategic Plan, discuss alternatives, risks and uncertainties of meeting cost/schedule goals.

In describing facilities, code words, if used, should be identified as such. Any unusual technical terms should be explained when used in project descriptions. Describe the following physical aspects as applicable. The description should read such that easy correlation can be made with the cost estimate given in Item 9. If the project contains subprojects, describe each subproject using the same aspects after a general introduction of the overall project.

* a If the data sheet shows a revised Current Baseline (TEC) cost estimate in item 6 of Figure IV-3k.2 explain the factors involved in determining the revised estimate. The explanation shall also be provided on the Significant Changes cover sheet, Figure IV-3k.1.

b Describe improvements to land and, where this item constitutes a major portion of the project, include information such as the approximate length, width, and types of roadways, approximate capacities of parking areas, and any proposed drainage structures and fencing.

c Describe each building or building addition, including approximate floor plan dimensions, gross area, number of stories, story heights, basement, if provided; types of construction and reason for using such if not obvious; types of heating and air-conditioning; capacities of cranes and any design, fabrication, or construction features which are unusual or specialized and have a significant impact on the cost estimate, such as shielding, protective construction, hot cells, or special ventilation systems, environmental protection systems, and fire protection systems.

d Describe other structures, such as pits, tunnels, towers, bunkers, stacks, and other enclosures not included in subparagraph (h)3 above.

e Describe types of utilities to be provided, such as water, sewer, and power, and where this item constitutes a major portion of the project, include information such as the length and size of the utility lines.

f Describe any special facilities, such as accelerator components, movable shielding, vacuum systems, processing piping, power

or controls, reactor vessels, inert gas, hydrogen or purging systems, or cryogenic systems.

g Describe any standard equipment included in this project, such as office and laboratory furniture and equipment, hoists, and machine tools.

h Describe any computer system or component of a computer system having a total estimated purchase cost of $2,000,000 or more. A brief justification and explanation of the rationale for utilizing construction funds shall be provided.

i Provide a description of that portion of the scope to be accomplished in the BY.

j For projects that contain Subprojects the following applies:

i After the subparagraph letter, provide a two-digit Subproject Number (01-99) preceding the Subproject Title and Location. The Subproject Number will be used to provide Obligational Authority in the Approved Funding Program (AFP) and to report Obligations and Costs to FIS.

ii Subproject Numbers will not be reused or changed during the life of the Project

iii Subproject titles shall not be changed.

iv Provide the Subproject Total Estimated Cost (TEC), the cumulative Appropriation for all previous years, the PY Appropriation, the CY Appropriation, and the BY Appropriation to complete the Subproject and the construction activity start and end dates with each subproject description as follows:

TEC	Prev.	FYPY	FYCY	FYBY	Outyear	Const. Start -- Comp. Dates
$51,600	$41,800	$4,400	$600	$0	$0	3rd Qtr 1993 - 3rd Qtr FY BY

Elements of the funding profile and construction schedule that changed from the last data sheet submitted to the Congress shall be underlined and a Redline should appear in the left margin. Explain the changes in the text description of the subproject. For EM-40 Subprojects, modify the TEC heading to read - TPC and enter the Subproject TPC.

v Provide the date Subproject construction activity starts and the date construction activity ends. If any date has changed from the date previously transmitted to Congress, provide an explanation in the description of the Subproject. For EM-40 Subprojects, (substitute the word cleanup for construction) the completion date will be the current ten-Year Plan end date or approved baseline end date, as appropriate.

vi Subproject data will be reconciled with total Project data.

vii The sum of the TEC for all Subprojects will equal the total line item cost on line d of Item 9, and the Total on line a.1.(a) in Item 11 of the Project Data Sheet (See Figure IV-3k.2). For EM-40 Subprojects, the TPC for all Subprojects will equal the TPC in Item 6 and line a.2.(i) of Item 11 of the Project Data Sheet.

viii The sum of the Appropriation amounts for each fiscal year for all Subprojects will equal the sum of the Appropriation and Adjustment amounts in the Financial Schedule for the fiscal year.

ix The sum of the Appropriation amounts for the previous fiscal years for all Subprojects will equal the sum of the Appropriation and Adjustment amounts in the Financial Schedule for all fiscal years previous to the PY.

x The dates in Items 4a and 4b of the Project Data Sheet will be the earliest construction (or cleanup for EM-40 projects) start date and the latest completion date for all Subprojects.

xi **Completed subprojects are to remain in the Project Data Sheet with its funding profile. To conserve**

space, the narrative description should be removed the year following the year it was reported completed to Congress.

k Describe the research, development, or production program which is underway or planned, including the relationship of the proposed facility (both as to need and timing) to the program objectives and schedules.

i State the criteria which determined the size or scope of the project, such as volume of production, storage capacity, number of persons to be housed, and space requirements for research.

ii To the maximum extent feasible within security limitations, data sheets for projects involving production increases should indicate the present production rate or capacity and the change proposed. If the project is deemed to be an intermediate phase of a long-range program, indicate its relationship to the foreseeable planned capacity. If a production facility, state annual capacity and basis therefore, i.e., 1-shift, 2-shift operation, 5-day week, 6-day week. When inclusion of capacity involves "Top Secret" data, indices shall be used to the maximum extent practicable, or, if not practicable, the information shall be submitted separately to the program office concerned.

iii If the purpose of the project is to replace existing facilities, explain fully the circumstances which make replacement necessary and the disposition to be made of the replaced facilities.

iv Indicate that existing facilities have been reviewed to determine that the need cannot be met by modification of existing facilities. This is of particular importance in the case of radioactive contaminated facilities where decontamination and decommissioning costs are factors.

v State the reasons for the proposed timing of the completion of the project and the effect on the program if the project is deferred or not authorized.

vi To the maximum extent practicable, justifications should contain data on the economics of the project including the basis for calculating savings and payout. In computing savings, comparative cost estimates shall include the cost of depreciation of the facility. Justifications can often be strengthened by reference to alternatives and to the consequences of disapproval.

vii State if costs include overhead of an off-site contract laboratory operated by a university or other institution, the reasons for including such overhead and the method by which the amount of such overhead was determined.

viii The project data sheet shall state the estimated gross annual cost (excluding depreciation) for operating the facilities upon completion, less any offsetting reductions which are applicable. In the case of replacement facilities, include comparative data for the facilities being replaced.

[1] For production type facilities and power producing facilities, the first full-year's operating costs, maintenance costs, and the annual costs at equilibrium should be set forth. Gross annual costs, revenues, or other offsetting reductions, and new annual costs should be shown.

[2] For research or development facilities, including new research machines, show separately the operating costs, maintenance costs, the total cost of the research or development program to be carried out, and the incremental program cost related to occupation of the new building.

[3] In all cases, the basis for these estimates of annual cost for operations and maintenance should be included.

l **Include two items of performance measurement data at the appropriate (project or subproject) level**:

i **Indicate what program planning objectives the project (or subproject) benefits/supports, and**

ii **Indicate the type and amount of project (or subproject) work to be completed during the budget year in quantifiable terms**.

9 **Item 9**, Details of Cost Estimate .

a This section of the data sheet consists of an estimate for each of the account classifications listed in subparagraph c below. Under each of the classifications give a breakdown of the costs, indicating significant units and costs wherever possible. Include all classifications. Enter zero dollars for classifications not applicable to the project. All costs should be presented in current year dollars, escalated to the midpoint of construction.

b General administrative and other indirect costs, properly charged to the project, shall not be shown as a line item but shall be prorated among the various elements of costs. Also, the estimated costs of construction management services by private firms shall be similarly prorated among the various elements of construction costs. All the account classifications shall be listed even if no dollar amount is applicable. If it has been determined that the project will be administered under an "off-site" contract with a university or other institution, and that the institution will be reimbursed for overhead in connection with such administration, a memorandum entry shall be included indicating the estimated amount of such overhead. The costs for preparing system design descriptions or any comparable technical documentation are to be budgeted for and costed to operating expense or construction consistent with the treatment of related expenditures, e.g., documents which are accomplished for conceptual design are charged to operating cost while those performed for Titles I and II are charged to construction. The costs for preparing environmental documentation shall be budgeted for and costed to operating expenses.

i Unit cost per square foot or cubic foot for buildings or other construction shall be computed on the basis of gross areas and shall exclude the amount included in the estimate for contingencies. Unit costs should not be more precise than warranted by the status of design.

ii The items to be shown in this section of the data sheet should include all pertinent data on quantities and unit costs. Unusual unit costs, engineering design, and inspection or contingency rates should be explained in notes.

iii A statement shall be included as a note at the end of the estimate to show the basis for the estimate, e.g., "conceptual design is complete, Title I design is 25 percent complete".

iv Explanatory notes shall be provided to indicate reasons why certain unit costs may be out of the normal range, such as: cost for special isolation requirements; costs related to speedup of construction showing hours per week on which estimate is based; and factors affecting the contingent amount.

v Actual costs in the narrative should be in whole dollars, tabular actual costs should be in thousands of dollars.

vi Escalation rates should be explicitly stated and when the rates are significantly different from the guidance provided in the Budget Call, a thorough explanation shall be provided.

c The account classifications to be used, together with explanatory notes, are provided below as noted costs are broken between design and construction:

i Design Phase.

[1] Preliminary and Final Design costs (Design Drawings, and Specifications. Record the cost of design, drawings, and specifications (DDS) on Figure IV-3k.2, Item 9.a.1., as shown.

[2] Design Management Costs as a Percentage of Design Phase. Report costs for those services provided by the organization responsible for management of the construction effort during Title I and Title II design as a percentage of 9.a.(1).

Construction management services are further defined in DOE 4700.1 and DOE 6430.1.

ii Construction Phase.

[1] Land and Land Rights. Provide a breakdown identifying each site to be acquired, the acreage or square miles involved, unit cost, and total cost or the cost of each land right acquired. See DOE 4300.1B, REAL PROPERTY AND SITE DEVELOPMENT PLANNING, for regulations concerning the acquisition of real property.

[2] Improvements to Land. Indicate the types of improvements to be made and total cost. Where this sub-item constitutes a major portion of the project, it should be expressed in terms of units, unit costs, and total cost, such as ___miles of road at $___ per mile.

[3] Buildings. List and identify each building or building addition to be constructed or existing building to be modified, showing gross square feet, unit cost, and total cost. If the unit cost is unusually high, provide an explanatory note.

[4] Special Equipment. Identify major engineered equipment, and special systems, as described in Item 8 of the Project Data Sheet (see subparagraph j(3)(k)8 f). Where major equipment components identified under “special facilities” appear to be standard in nature but are listed as special because, for example, they actually require special engineering and/or fabrication to meet requirements, an explanation of the special nature of the equipment should be included.

[5] Other Structures. List and provide costs for each major other structure described in Item 8 of the Project Data Sheet (see subparagraph j(3)(k)8 d).

[6] Utilities. List the types of utilities described in Item 8 of the Project Data Sheet (see subparagraph

j(3)(k)8 e) and the total cost. Where this subitem constitutes a major portion of the project, units, unit costs, and total costs should be shown.

[7] Standard Equipment. List and provide costs for the major items of "off-the-shelf" equipment and furnishings, requiring a nominal engineering effort, as described in Item 8 of the Project Data Sheet (see subparagraph j(3)(k)8 g). Costs shall include any engineering effort required.

[8] Major Computer Items. List and provide costs for each major computer item as described in subparagraph j(3)(k)8 h.

[9] Removal Cost Less Salvage. Include removal costs less salvage incident to the replacement of plant and equipment applicable to the project. Separate projects shall be established to budget and account for removal costs and salvage incident to the retirement of plant equipment which is not to be replaced.

[10] Inspection, Design and Project Liaison, Testing, Checkout, and Acceptance. The cost of assisting in the design and development of equipment (not to be confused with start-up costs).

[11] Construction Management Costs. Report costs for those services provided by the organization responsible for management of the construction effort after Title I and Title II design and continuing through completion of construction. Construction management services are further defined in DOE 4700.1 and DOE 6430.1.

[12] Project Management. Report costs for those services provided to the DOE on a specific project, after the design phase and starting with the construction phase through completion, for planning, organizing, directing, controlling, and reporting on the status of the project. Compute the approximate percentage of total. construction costs

in Item 9.b. rounding off to the nearest tenth of a percent.

iii Contingency at Approximate Percentage of Above Costs. Compute and indicate a total (design and construction phase) contingency amount as a percentage of all above costs, rounding to the nearest percent. This contingency is provided to cover unforeseen and unpredictable situations and shall not provide for increasing the scope of the project. The amount of contingency will depend on the status of design and complexity of the project.

[1] Design Phase. Show design phase contingencies as a subtotal of total contingencies.

[2] Construction Phase. Show construction phase contingencies as a subtotal of total contingencies.

ix Total Line Item Cost. Add contingencies to subtotal.

x Non-Federal Contribution. Non-Federal funds from other sources that are considered capital funds contained in the Total line item cost.

xi Net Federal Total Estimated Cost (TEC). The Federal cost net of non-Federal contribution. This is the TEC shown in Item 6.

10 **Item 10**, Method of Performance. Indicate the type of contracting arrangements contemplated, using the following paragraphs or combinations of parts of these paragraphs as a guide:

a Design and inspection shall be performed under a negotiated architect or engineer contract. Construction and procurement shall be accomplished by fixed price contracts awarded on the basis of competitive bidding.

b Design and inspection shall be performed by the operating contractor. To the extent feasible, construction and procurement shall be accomplished by fixed price contracts and subcontracts awarded on the basis of competitive bidding.

11 **Items 11 and 12**. All project data sheets shall contain an item 11 and an item 12. Item 11 shall contain the financial schedule and item 12 shall contain the narrative material associated with the financial schedule. Items 11 and 12 shall be prepared as illustrated in the sample Figure IV-3k.2, using the amount of space required for presentation under each section. If the project includes subprojects, attach a page in the format of Sections 11 and 12 for each subproject. Aggregated data should be supplied in Section 11 and 12 of the data sheet.

12 Detailed Instructions In Completing Items 11 and 12. The cost estimates in item 11 are to be developed using the general guidance provided below. Item 12 shall parallel the costs detailed in item 11 with a narrative justification and explanation. The narrative shall include a brief description of each item in 11, its cost, the basis for operating expense funding and a schedule for accomplishment of the item. It should include the estimated start and completion dates and relevant project interface dates.

a Total Project Costs (item 11(and 12).a).

I Total Facility Costs (item 11(and 12).a.1). This section shall contain all those costs which are directly related to construction of the facility.

[1] Line Item (item 11(and 12).a.1.(a)). The line item costs must agree with the TEC before offset for Non-Federal contribution in Item 9.j. Cost are broken between design and construction.

[2] Plant Engineering and Design (item 11(and 12).a.1.(b)). Include any operating expense engineering and design costs, exclusive of the conceptual design costs identified in subparagraph ii [2] below, prior to construction funding availability.

[3] Operating Expense Funded Equipment (item 11(and 12).a.1.(c)). Any equipment, system, component, or other item which is funded from operating expenses for the direct use of the construction project or is required to make the facility or experiment complete and operable should be included. A narrative justification should be included to explain the

reasons for such items and examples of items to be funded in this manner.

[4] Inventories (item 11(and 12).a.1.(d)). Any inventories which are necessary to put the facility into use should be included.

[5] Total Facility Cost (Federal and Non-Federal) (item 11(and 12).a.1.(e)). Total items identified in I through iv above.

ii Other Project Costs (item 11(and 12).a.2). All estimated costs shall be escalated to the year of planned expenditure. Actual costs shall be shown when incurred.

[1] R&D Necessary to Complete Construction (item 11(and 12).a.2.(a)). Any construction project which requires the conduct of a Research and Development program directly prerequisite to its specific design and construction features and for which R&D funds are included in the operating expenses appropriation request shall include the total cost by fiscal year for such R&D.

[2] Conceptual Design Costs (item 11(and 12).a.2.(b)). Indicate the cost of the conceptual design and Conceptual Design Report (CDR).

[3] Decontamination and Decommissioning (D&D) (item 11(and 12).a.2.(c)). Costs associated with removal of hazardous material (typically radioactive or chemical material) from facilities, soils, or equipment by washing, chemical action, mechanical cleaning, or other remediation techniques. Also include costs associated with decommissioning (demolition, dismantling, and removal, see DOE Accounting Handbook, Chapter 10, Plant and Capital Equipment.

[4] NEPA Documentation Costs (item 11(and 12).a.2.(d)). All costs of complying with NEPA 1969 including: EAs, EISs, permitting actions, and site characterization.

[5] Other Project Related Costs (item 11(and 12).a.2.(e)). Any other costs directly related to the project that occur on a one-time basis, such as start-up costs, and training should be listed along with a narrative explaining and justifying each cost.

[6] Total Other Project Costs (item 11(and 12).a.2.(f)). Total the project costs identified in [1] through [5] above.

[7] Total Project Costs (item 11(and 12).a.2.g)). Total the costs in I [5] (Item 11.a.1.e) and ii [6] (Item 11.a.s.f) above including any Non-Federal contribution.

[8] Non-Federal Contribution (item 11(and 12).a.2.(h)). Include Non-Federal funds from other sources that are considered operating funds and any Non-Federal capital funds identified in Item 9.j.

[9] Net Federal Total Project Cost (TPC) (item 11(and 12).a.2.(i)). Total project cost less Non-Federal contribution.

[10] The total costs in Item 11 on line a.1.(a) will be the same as the costs in Item 9 on line 9.i. For EM-40 projects, the TPC by year in Item 11 in line a.2.(i) will equal the costs by year in Item 7.

b Related Annual Cost. This section should include the costs directly associated with the operation and maintenance of the facility. An estimate of the annual cost (Item 11b) and a narrative explanation (Item 12b) should be included. Indicate when the annual cost will begin to be incurred. The annual cost, which will represent average per year over the useful life, should be escalated to the first year in which the cost will be incurred. Any significant variances in the annual cost estimates year to year should be discussed in the narrative. For example, there may be planned purchase of a major item of equipment which shall substantially change the annual costing later or make a significant change in the mode of operation. Any significant variations in the annual costing rates or the preceding items should be footnoted. For example, the procurement of a

new nuclear reactor core on a very infrequent basis would greatly increase the annual capital equipment cost rate for a facility. These deviations in costs should be segregated from the annual cost rate. Indicate the estimated useful life of the facility (years).

i Facility Operating Costs (item 11(and 12).b.1). The estimate should include the annual costs to operate the facility including cost of labor and materials. The narrative should include:

[1] The staff years of effort required to operate the facility, and

[2] A statement indicating whether it does or does not replace any other facility. If a replacement facility, provide total, not incremental, annual costs.

ii Facility Maintenance and Repair Costs (item 11(and 12).b.2). Include all non-construction maintenance efforts and repair. In the narrative, specify the staff years of effort required to maintain and repair the facility.

iii Programmatic Operating Expenses Directly Related to the Facility (item 11(and 12).b.3).Include programmatic effort which relies upon the direct and primary use of the facility. Provide a yearly estimate and narrative justification.

iv Capital Equipment not Related to Construction but related to the Programmatic Effort in the Facility (item 11(and 12).b.4). An estimate of annual capital equipment needs not related to construction but related to the programmatic effort included in subparagraph j(3)(k)(xii)2 a should be included. The accompanying narrative should explain any expected installations of new programmatic related capital equipment.

v GPP or Other Construction related to the programmatic Effort in the Facility (item 11(and 12).b.5). Include a yearly cost estimate and narrative justification of a General Plant Project or other expected construction

related to programmatic effort included in subparagraph j(3)(k)12 b i.

vi Utility Costs (item 11(and 12).b.6). All annual utility costs incurred to operate the facility.

vii Other Costs (item 11(and 12).b.7). Any other expected annual costs should be listed with an accompanying narrative.

13 Item, 13 Design and Construction of Federal Facilities. The following paragraph should be used.

"All DOE facilities are designed and constructed in accordance with applicable Public Laws, Executive Orders, OMB Circulars, Federal Property Management Regulations, and DOE Orders. The total estimated cost of the project includes the cost of measures necessary to assure compliance with Executive Order 12088, "Federal Compliance with Pollution Control Standards"; section 19 of the Occupational Safety and Health Act of 1970, the provisions of Executive Order 12196, and the related Safety and Health provisions for Federal Employees (CFR Title 29, Chapter XVII, Part 1960); and the Architectural Barriers Act, Public Law 90-480, and implementing instructions in 41 CFR 101-19.6."

a The applicable statement a or b should be included:

I "The project will be located in an area not subject to flooding determined in accordance with Executive Order 11988."

ii "The project location in an area subject to flooding has been evaluated and the findings, determined in accordance with Executive Order 11988, are that ...". The appropriate material from the finding must be included.

b The applicable statement a or b should be included:

I "DOE has reviewed the GSA inventory of Federal Scientific laboratories and found insufficient space available, as reported by the GSA inventory."

ii Other appropriate statement in lieu of the above.

Item 13 is required in the Field Budget, Draft OMB Budget, and OMB Budget Request submissions. For the <u>Congressional Budget Request, Item 13 is not prepared.</u>

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
(Changes from FY **19CY** Congressional Budget Request are denoted with a vertical line in left margin.)

DEFENSE ASSET ACQUISITION
(Tabular dollars in thousands. Narrative material in whole dollars.)

Defense Programs Stockpile Management

1.	Title and Location of Project:	CMR Upgrades Project - Title I & II Design Los Alamos National Laboratory, Los Alamos, New Mexico	2a. Project No.: 95-D-102 2b. Construction Funded (design only)

SIGNIFICANT CHANGES

● None

Figure IV-3k.1
Project Data Sheet Significant Changes

DEPARTMENT OF ENERGY
FY 19BY CONGRESSIONAL BUDGET REQUEST
(Changes from FY 19CY Congressional Budget Request are denoted with a vertical line in left margin.)

DEFENSE ASSET ACQUISITION
(Tabular dollars in thousands. Narrative material in whole dollars.)

Defense Programs Stockpile Stewardship

1.	Title and Location of Project:	CMR Upgrades Project - Title I & II Design Los Alamos National Laboratory, Los Alamos, New Mexico		2a. Project No.: 95-D-102 2b. Construction Funded (design only)
		Preliminary Schedule	Title I Baseline	Current Baseline Schedule
3a.	Date A-E Work Initiated, (Title I Design Start Scheduled):	1st Qtr. FY 1992		
3b.	A-E Work (Titles I & II) Duration:	52 months		
4a.	Date physical Construction Starts:			
4b.	Date Construction Ends:			
		Preliminary Estimate		
	Total Design Cost --	$52,286		
		Preliminary Estimate	Title I Baseline	Current Baseline Estimate[b]
5.	Total Estimated Cost (TEC) --	a/		
6.	Total Project Cost (TPC) --	a/		

7.a Design Financial Schedule (Federal Funds):

Fiscal Year	Appropriations	Adjustments	Obligations	Costs
1992	$ 12,000	0	$ 12,000	$ 8,120
1993	15,000	0	15,000	15,050
1994	15,250	0	15,250	17,300
1995	10,036	0	10,036	10,816
1996	0	0	0	0

a/ Preliminary Cost Estimates for the CMR Upgrades project are based upon the Conceptual Design Report dated 11/4/90. The preliminary estimates are: Total Estimated Cost (TEC) -- $174,100 (K) and Total Project Cost (TPC) -- $223,635 (K). These estimates are used for the purpose of requesting design funding only. Future construction funding (if requested) will be based upon Title I cost estimates.

[b]Current Baseline Estimate is the latest baseline which reflects the approved changes to the Title I baseline.

Figure IV-k.2a
Project Data Sheet
(Design Title I & II Funding Only)

1.	Title and Location of Project:	CMR Upgrades Project - Title I & II Design Los Alamos National Laboratory, Los Alamos, New Mexico	2a. Project No.: 95-D-102 2b. Construction Funded (design only)

8. Project Description, Justification and Scope

The Chemistry and Metallurgy Research (CMR) Building is the largest structure at the Los Alamos National Laboratory (550,000 square feet). Construction of the CMR Building was completed in 1952. Most of the major mechanical and electrical equipment has reached the end of its design life.

Since its construction 40 years ago, the CMR Building has been used for research, development, and analytical work with plutonium, uranium and their alloys, and other materials in support of weapons, nuclear materials, and other Laboratory programs. This work continues to be essential to the nation's weapons program, with the principal activities in the building being in support of the plutonium research, development, and demonstration activities conducted at the Laboratory's Plutonium Handling Facility at TA-55. The activities that are critical to these plutonium operations are:

- Essential daily analytical chemistry and metallurgical services on plutonium and other actinides.
  - Analyses of plutonium metal preparations for the Laboratory's Weapons Research, Development, and Test Programs.
  - Analyses required for development and demonstration of new and improved processing methods for scrap recovery.
  - Analyses required for accountability and verification of material received or shipped and for on-site transfers.

- The CMR Building future role is also essential for support of several major Defense Programs areas which include:

  - Enhanced Safety and Reliability of Nuclear Weapons
  - Lead Technical Laboratory for Pu and U Processing
  - Weapons Dismantlement and Component Storage

The primary purpose of this project is to upgrade facility systems and infrastructure that has been in continuous operation for 40 years and are near the end of their useful life. Such upgrading will ensure the continued safety of the public and Laboratory employees and increase the operational safety, reliability and security of essential activities. Increased safety, reliability, and security are critical to the continued operation of the Laboratory's Stockpile Stewardship Programs and other national defense programs.

Funding is requested to initiate Title I & II design of the project. No funding of construction activities is requested.

The equipment replacements and upgrades included:

- **Continuous Air Monitor (CAM) Installations**

Figure IV-k.2a
Project Data Sheet
(Design Title I & II Funding Only)

Install a new CAM system in the Wings 3, 5, 7, and 9 laboratories. Upgrades include installation of CAMs, Fixed head Air Samplers (FAS), and glovebox hand monitors as required by DOE Order 5480.11 and AR 3-7. Remote monitoring capabilities at the Health Physics office and a data logging system are also included. Existing vacuum systems in Wings 3, 5, and 7 will be utilized while the vacuum system in Wing 9 will be expanded.

- **HVAC Blowers and Motors**

  Replace existing laboratory exhaust fans in the CMR Building and provide vibration analysis for approximately twenty exhaust fans in the CMR Building. Immediate needs are to replace the 200 HP exhaust fans on the first floor of the filter towers in Wings 3, 5, and 7. Other exhaust fans may require replacement contingent on the scope of the Phase 2 Confinement Zone Separation upgrade.

8. Project Description, Justification and Scope (Continued)

- **Electrical Upgrades**

  The Distribution Analysis and Power Planning Evaluation and Reporting (DAPPER) software will be used for analysis, calculations, and record drawings for all electrical upgrades. Provisions to incorporate a future facility computer monitoring and limited control system will be provided as part of the Electrical Upgrades.

Exterior Electrical Upgrades: Replace inadequately sized exterior sectionalizing switches, eliminate existing exterior single point failures, modify exterior underground electrical system to allow switching and maintenance functions, upgrade existing controls and correct deficiencies to the existing administration wing, and Wings 1, 3, 4, and 9 substations.

Substations Upgrade: Replace substations in Wings 2, 5, and 7.

Wing Electrical Upgrades: Upgrade the interior low voltage power distribution system for all wings except 2 and 4 in the CMR Building. This includes the replacement of power and lighting panel boards, laboratory power panel boards, bus ways, motor control centers, replacement of all obsolete branch and feeder wiring systems, rewiring of laboratories, and upgrading the emergency and exit lighting systems.

Electrical Upgrades to Support Safe Standby, Wings 2 and 4: Upgrade the interior low voltage power distribution system in Wings 2 and 4, which is necessary for safety systems.

Spinal Corridor Cable Tray: Provide a cable tray system in the attic spinal corridor.

Figure IV-k.2a
Project Data Sheet
(Design Title I & II Funding Only)

Grounding and Lightning Protection: Upgrade the CMR Building grounding and lightning protection systems.

- **Stack Monitors Upgrade**

  Provide a stack effluent monitoring system for the CMR Building that is in compliance with DOE and EPA requirements. Each stack will be evaluated to determine the type of monitoring required. Each stack system will be stand alone, consisting of in-line samplers, CAMS, vacuum pumps, and associated tubing, wiring, and signal processing equipment. This upgrade also includes a data collection system from all of the stack CAM's to the CMR operations room and the ES&H operations room. The stack effluent monitoring will be in compliance with 40 CFR 61 and DOE Order 6430.1A.

- **Uninterruptable Power Supply (UPS) Installation**

*
*
  This Upgrade is in support of the Stack Monitors Upgrade. There will be one UPS supporting the stack monitoring data collection computer systems. The UPS will be capable of providing backup power to the stack effluent monitoring systems for a 4 hour period.

8. Project Description, Justification and Scope (Continued)

- **Duct Modification**

  Backdraft Dampers: Provide positive shutoff intake backdraft dampers in the supply air ductwork in Wings 2, 3, 4, 5, 7, and 9.

  Duct Washdown Upgrade: Upgrade the existing exhaust duct washdown system in Wings 3, 5, and 7. This includes replacement of piping, valves, and spray heads and installation of new flow measurement devices.

- **Acid Vents and Drains Upgrades**

  Aging piping and a lack of gradient in the acid drain system in the basement of the CMR Building has led to corrosion and clogging of the system. This upgrade includes evaluation and documentation of the existing system, prioritization of the system deficiencies, and cost estimates to correct each deficiency for Wings 3, 5, and 7. Construction will include replacement of piping and components including threaded nipples, fittings, valves, flanged fittings, and gaskets with compatible new components.

Figure IV-k.2a
Project Data Sheet
(Design Title I & II Funding Only)

1.	Title and Location of Project:	CMR Upgrades Project - Title I & II Design Los Alamos National Laboratory, Los Alamos, New Mexico	2a. Project No.: 95-D-102 2b. Construction Funded (design only)

9. Detail of Cost Estimate

	Item Cost	Total Cost
a. Design Phase.		$ 43,667
(1) Preliminary and Final Design costs, (Design, Drawings, and Specifications)	$ 33,667	
(2) Design Management costs @ 29.7% of (a)	10,000	
c. Contingencies at approximately 19.7 percent of above costs		8,619
1. Design Phase	8,619	
d. Total line item cost (Section 11.a.1.(a))		$52,286
e. LESS: Non-Agency contribution (Define in Section 12).		0
f. Total Agency Requirement (Design Only)		$52,286

10. Method of Performance

Procurement will be accomplished under fixed-price subcontracts awarded on the basis of competitive bidding. Consideration will be given to cost-plus-fixed fee on decontamination and refurbishment work on the CMR. Upgrades construction will be done by fixed price contractors and the Laboratory's support services subcontractor. The operating contractor and contracted Architect-Engineers will perform construction inspection.

Figure IV-k.2a
Project Data Sheet
(Design Title I & II Funding Only)

1.	Title and Location of Project:	CMR Upgrades Project - Title I & II Design Los Alamos National Laboratory, Los Alamos, New Mexico	2a. Project No.: 95-D-102 2b. Construction Funded (design only)

11. Schedule of Project Funding and Other Related Funding Requirements

	Prior Years	FY 1993	FY 1994	FY 1995	Outyear	Total
a. Total design costs (Agency Requirements)						
1. Total facility costs						
(a) Design (Section 9.a & Section 9.c.1))	$ 8,120	$ 15,050	$ 17,300	$ 10,816	$ 2,000	$ 52,286
(c) Plant, Engineering and Design (PE&D)	0	0	0	0	0	0
(d) Operating expense funded equipment.	0	0	0	0	0	0
(e) Inventories	0	0	0	0	0	0
Total facility costs (Federal and Non-Federal)	$ 8,120	$ 15,050	$ 17,300	$ 10,816	$ 2,000	$52,286
2. Other project costs						
(a) R&D necessary to complete project	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
(b) Conceptual design costs	0	0	0	0	0	0
(d) NEPA documentation costs	0	0	0	0	0	0
(e) Other ES&H costs	0	0	0	0	0	0
(f) Other project related costs (Define in Section 12)	0	0	0	0	0	0
(g) Total other project costs	$ 0	0	$ 0	$ 0	$ 0	$ 0
Total design costs	$ 8,120	$ 15,050	$ 17,300	$ 10,816	$ 2,000	$ 52,286
3. LESS: Non-Agency contribution (define Federal vs non-Federal)	0	0	0	0	0	0
Agency total design costs	$ 8,120	$ 15,050	$ 17,300	$ 10,816	$ 2,000	$ 52,286

Figure IV-k.2a
Project Data Sheet
(Design Title I & II Funding Only)

1.	Title and Location of Project:	CMR Upgrades Project - Title I & II Design Los Alamos National Laboratory, Los Alamos, New Mexico	2a. Project No.: 95-D-102 2b. Construction Funded (design only)

12. Narrative Explanation of Total Project Funding and Other Related Funding Requirements

a. Total project funding
   1. Total facility costs
      (a) Line item -- Narrative not required.
      (b) PE&D -- None.
      (c) Operating expense funded equipment -- Narrative not required.
      (d) Inventories -- None.

   2. Other project costs
      (a) R&D necessary to complete construction -- No research and development is necessary to establish the specific design and construction features.
      (b) Conceptual design -- None. Phase 1 line item. [c]
      (c) Decontamination and Decommissioning (D&D) -- None.
      (d) NEPA documentation -- None. Phase 1 line item costs include NEPA documentation costs.
      (e) Other project related costs -- Operational testing and acceptance, including the Operational Readiness Review has been allowed on selected major system upgrades. Training materials, programs, and test/certification will be updated to reflect the change in site operations resulting from selected systems upgrades becoming operational. See also paragraph 17, Environmental Impacts, below.

b. Related annual costs
   1. Annual facility operating costs -- The CMR facility were estimated from the FY 1995 budget requirements for CMR operations.
   2. Annual facility maintenance/repair costs -- These are based upon current budget requirements for CMR maintenance.
   3. Annual programmatic effort related to facility -- The programmatic effort which relies upon the direct and primary use of the CMR facilities was established at the FY 1992 level-of-effort based on the unique capabilities of handling radioactive materials. This assumes a constant level-of-effort in these programs.
   4. Other Annual Costs -- These are anticipated to be approximately $1,000,000/year based upon current CMR programmatic needs.

[c] CDR and Environmental Assessment costs are carried as part of the Phase 1 Engineering Assessment/Phase 2 Planning Activities and are broken out for clarify.

Figure IV-k.2a
Project Data Sheet
(Design Title I & II Funding Only)

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
(Changes from FYCY Congressional Budget Request are denoted with a vertical line in left margin.)

DEFENSE ASSET ACQUISITION
(Tabular dollars in thousands. Narrative material in whole dollars.)

Defense Programs Stockpile Management

1.	Title and Location of Project:	CMR Upgrades Project, Design and Construction Los Alamos National Laboratory, Los Alamos, New Mexico	2a. Project No.: 95-D-102 2b. Construction Funded

SIGNIFICANT CHANGES

- Total estimated cost for Processed Chilled Water, Main Vault, Acid Vents and Drains, and Exhaust Duct Washdown Recycle System Upgrades have been adjusted to reflect completed Preliminary Design (Title I) estimates.

Figure IV-3k2b
Project Data Sheet Significant Changes

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
(Changes from FYCY Congressional Budget Request are denoted with a vertical line in left margin.)

DEFENSE ASSET ACQUISITION
(Tabular dollars in thousands. Narrative material in whole dollars.)

Defense Programs Stockpile Stewardship

1.	Title and Location of Project:	CMR Upgrades Project, Design and Construction Los Alamos National Laboratory, Los Alamos, New Mexico		2a. Project No.: 95-D-102 2b. Construction Funded
		Preliminary Schedule	Title I Baseline	Current Baseline Schedule
3a.	Date A-E Work Initiated, (Title I Design Start Scheduled):	1st Qtr. FY 1992	1st Qtr. FY 1992	1st Qtr. FY 1992
3b.	A-E Work (Titles I & II) Duration :	52 months	52 months	52 months
4a.	Date physical Construction Starts:	3rd Qtr. FY 1993	3rd Qtr FY 199	3rd Qtr. FY 1993
4b.	Date Construction Ends:	3rd Qtr. FY 2002	3rd Qtr FY 2002	3rd Qtr. FY 2002
		Preliminary Estimate	Title I Baseline	Current Baseline Estimate[a]
5.	Total Estimated Cost (TEC)	$174,100	$174,100	$174,100
6.	Total Project Cost (TPC) --	$223,635	$223,635	$223,635

7.a. Design Financial Schedule (Federal Funds):

Fiscal Year	Appropriations	Adjustments	Obligations	Costs
1992	$ 12,000	0	$ 12,000	$ 8,120
1993	15,000	0	15,000	15,050
1994	15,250	0	15,250	17,300
1995	10,036	0	10,036	10,816
1996	0	0	0	2,000

[a] Current Baseline Estimate is the latest baseline which reflects the approved changes to the Title I baseline.

Figure IV-3k.2b
Project Data Sheet
(Design and Construction Phase Funded)

1. Title and Location of Project:	CMR Upgrades Project, Design and Construction LANL, Los Alamos, New Mexico (Continued)	2a.Project No.: 95-D-102 2b.Construction Funded

7.b. Construction Financial Schedule (Federal Funds):

Fiscal Year	Appropriations	Adjustments	Obligations	Costs
1993	12,000	0	12,000	8,500
1994	14,500	0	14,500	14,000
1995	18,000	0	18,000	15,500
1996	22,000	0	22,000	20,500
1997	20,000	0	20,000	21,000
1998	15,000	0	15,000	12,300
1999	12,500	0	12,500	13,000
2000	7,814	0	7,814	6,800
2001	0	0	0	6,000
2002	0	0	0	4,214

8. Project Description, Justification and Scope

The Chemistry and Metallurgy Research (CMR) Building is the largest structure at the Los Alamos National Laboratory (550,000 square feet). Construction of the CMR Building was completed in 1952. Most of the major mechanical and electrical equipment has reached the end of its design life.

Since its construction 40 years ago, the CMR Building has been used for research, development, and analytical work with plutonium, uranium and their alloys, and other materials in support of weapons, nuclear materials, and other Laboratory programs. This work continues to be essential to the nation's weapons program, with the principal activities in the building being in support of the plutonium research, development, and demonstration activities conducted at the Laboratory's Plutonium Handling Facility at TA-55. The activities that are critical to these plutonium operations are:

- Essential daily analytical chemistry and metallurgical services on plutonium and other actinides.
  - Analyses of plutonium metal preparations for the Laboratory's Weapons Research, Development, and Test Programs.
  - Analyses required for development and demonstration of new and improved processing methods for scrap recovery.
  - Analyses required for accountability and verification of material received or shipped and for on-site transfers.
- The CMR Building future role is also essential for support of several major Defense Programs areas which include:
  - Enhanced Safety and Reliability of Nuclear Weapons
  - Lead Technical Laboratory for Pu and U Processing
  - Weapons Dismantlement and Component Storage

Figure IV-3k.2b
Project Data Sheet
(Design and Construction Phase Funded)

1.	Title and Location of Project:	CMR Upgrades Project, Design and Construction LANL, Los Alamos, New Mexico (Continued)	2a.Project No.: 95-D-102 2b.Construction Funded

The primary purpose of this project is to upgrade facility systems and infrastructure that has been in continuous operation for 40 years and are near the end of their useful life. Such upgrading will ensure the continued safety of the public and Laboratory employees and increase the operational safety, reliability and security of essential activities. Increased safety, reliability, and security are critical to the continued operation of the Laboratory's Stockpile Stewardship Programs and other national defense programs.

The Special Nuclear Materials Laboratory (SNML) Project was authorized (88-D-105) to replace the CMR Building at Los Alamos National Laboratory. In FY 1990, the project was put on hold pending a substantive review of the project including other potential options for providing the necessary specialized Laboratory space. As the planned completion date of the SNML continued to be pushed back, it became necessary to provide interim upgrades to CMR to allow its safe and reliable use in the interim period; $6,250,000 was reprogrammed (91-R-14, executed in FY 1992) from the SNML line item to Project 90-D-102, Nuclear Weapons Research, Development and Testing Facilities Revitalization, Phase III (WRD&T Revit., 3), subproject CMR Upgrades (Phase 1). Later in FY 1991, it was decided not to proceed with the construction of SNML but provide interim upgrades, to CMR (Phase 1) and to identify further upgrades based on safety and risk assessment, for continued long-term operations. The result of these safety and risk assessments is an Interim Safety Analysis Report (ISAR). The findings of the ISAR are the basis for the scope of CMR Upgrades Phases 2 and 3, which were combined with Phase 1 to produce this stand alone line item in FY 1995.

The ISAR includes an analysis of risks associated with natural phenomena design basis accidents, current operations, and comparison to criteria (6430.1A). The ISAR was utilized as the basis to identify and prioritize upgrades that would be required to continue operations in a safe, secure, and reliable manner for at least the next 20 years.

CMR Phase 1 Upgrade

Phase 1 was formerly part of WRD&T Revit, 3 with a TEC of $49,500,000. Based upon the 1995 baseline change proposal and the completion of the CDR, the TEC changed to $51,600,000 and completion date changed from 3rd Qtr. FY 1996 to 3rd Qtr. FY 1998.

Phase 1 of this project consists of required and urgent capital equipment replacements and upgrades in the CMR Building. Individual tasks were initially identified by a panel commissioned by the Deputy Assistant Secretary for Military Application (DASMA) in July 1990, as the minimum essential effort required to maintain operations in the CMR Building while a Safety Analysis Report (SAR) was prepared.

* The FY 1998 funds for Phase 1 will be used to complete Phase 1 construction activities. Most Phase 1 construction activities will be substantially completed 3rd Qtr. FY 1997.

The equipment replacements and upgrades included:

- **Continuous Air Monitor (CAM) Installations**

  Install a new CAM system in the Wings 3, 5, 7, and 9 laboratories. Upgrades include installation of CAMs, Fixed head Air Samplers (FAS), and glovebox hand monitors as required by DOE Order 5480.11 and AR 3-7. Remote monitoring capabilities at the Health Physics office and a data logging system are also included. Existing vacuum systems in Wings 3, 5, and 7 will be utilized while the vacuum system in Wing 9 will be expanded. This project is complete.

- **HVAC Blowers and Motors**

Figure IV-3k.2b
Project Data Sheet
(Design and Construction Phase Funded)

Replace existing laboratory exhaust fans in the CMR Building and provide vibration analysis for approximately twenty exhaust fans in the CMR Building. Immediate needs are to replace the 200 HP exhaust fans on the first floor of the filter towers in Wings 3, 5, and 7. Other exhaust fans may require replacement contingent on the scope of the Phase 2 Confinement Zone Separation upgrade. This subproject is 97 percent complete. *

8. Project Description, Justification and Scope (Continued)

- **Electrical Upgrades**

The Distribution Analysis and Power Planning Evaluation and Reporting (DAPPER) software will be used for analysis, calculations, and record drawings for all electrical upgrades. Provisions to incorporate a future facility computer monitoring and limited control system will be provided as part of the Electrical Upgrades.

Exterior Electrical Upgrades: Replace inadequately sized exterior sectionalizing switches, eliminate existing exterior single point failures, modify exterior underground electrical system to allow switching and maintenance functions, upgrade existing controls and correct deficiencies to the existing administration wing, and Wings 1, 3, 4, and 9 substations. This portion of Electrical Upgrades is scheduled for completion 3rd Qtr. FY 1997. *

Substations Upgrade: Replace substations in Wings 2, 5, and 7. This portion of Electrical Upgrades is scheduled for completion 2nd Qtr. FY 1997. *

Wing Electrical Upgrades: Upgrade the interior low voltage power distribution system for all wings except 2 and 4 in the CMR Building. This includes the replacement of power and lighting panel boards, laboratory power panel boards, bus ways, motor control centers, replacement of all obsolete branch and feeder wiring systems, rewiring of laboratories, and upgrading the emergency and exit lighting systems. This portion of Electrical Upgrades is scheduled for completion 2nd Qtr. FY 1997. *

Electrical Upgrades to Support Safe Standby, Wings 2 and 4: Upgrade the interior low voltage power distribution system in Wings 2 and 4, which is necessary for safety systems. This portion of Electrical Upgrades is scheduled for completion 4th Qtr. FY 1998. *

Spinal Corridor Cable Tray: Provide a cable tray system in the attic spinal corridor. This portion of Electrical Upgrades was completed 1st Qtr. FY 1996. *

Grounding and Lightning Protection: Upgrade the CMR Building grounding and lightning protection systems. This portion of Electrical Upgrades is scheduled for completion 1st Qtr. FY 1997. * *

- **Stack Monitors Upgrade**

Provide a stack effluent monitoring system for the CMR Building that is in compliance with DOE and EPA requirements. Each stack will be evaluated to determine the type of monitoring required. Each stack system will be stand alone, consisting of in-line samplers, CAMS, vacuum pumps, and associated tubing, wiring, and signal processing equipment. This upgrade also includes a data collection system from all of the stack CAM's to the CMR operations room and the ES&H operations room. The stack effluent monitoring will be in compliance with 40 CFR 61 and DOE Order 6430.1A. This subproject is currently estimated to be 97 percent complete. *

Figure IV-3k.2b
Project Data Sheet
(Design and Construction Phase Funded)

- **Uninterruptable Power Supply (UPS) Installation**

*
* This Upgrade is in support of the Stack Monitors Upgrade. There will be one UPS supporting the stack monitoring data collection computer systems. The UPS will be capable of providing backup power to the stack effluent monitoring systems for a 4 hour period. This subproject is 99 percent complete.

8. Project Description, Justification and Scope (Continued)

- **Duct Modification**

* **Backdraft Dampers:** Provide positive shutoff intake backdraft dampers in the supply air ductwork in Wings 2, 3, 4, 5, 7, and 9. This subproject is 92 percent complete.

* **Duct Washdown Upgrade:** Upgrade the existing exhaust duct washdown system in Wings 3, 5, and 7. This includes replacement of piping, valves, and spray heads and installation of new flow measurement devices. This portion of the Duct Modifications is scheduled for completion 4th Qtr. FY 1996.

- **Sanitary Sewer Upgrades**

* This subproject was completed 3rd Quarter of FY 1994.

- **Acid Vents and Drains Upgrades**

* Aging piping and a lack of gradient in the acid drain system in the basement of the CMR Building has led to corrosion and clogging of the system. This upgrade includes evaluation and documentation of the existing system, prioritization of the system deficiencies, and cost estimates to correct each deficiency for Wings 3, 5, and 7. Construction will include replacement of piping and components including threaded nipples, fittings, valves, flanged fittings, and gaskets with compatible new components. Remaining system replacement will be incorporated in Phase 2. This subproject is scheduled for completion 4th Qtr. FY 1998.

- **Fire Hazard Analysis (Formerly Fire Protection Upgrades)**

*
* A Fire Hazard Analysis (FHA) on the CMR Building will be completed in accordance with DOE Order 5480.7A. A cost benefit analysis will be performed on the results of the FHA and the existing National Fire Protection Act (NFPA) 101 analysis to prioritize deficiencies. Identified required upgrades will be done as part of Phase 2. This subproject was completed during the 2nd Qtr. FY 1996.

- **Safety Analysis Report**

* Perform a complete safety analysis for the CMR Building operations. Activities include analysis, documentation, and review. Complete an Interim Safety Analysis Report (ISAR) to aid in determining the basis for long term upgrades for the CMR Building. Produce a Final Safety Analysis Report (FSAR) to define the safety envelope and the authorization basis for the operation of the CMR Building. The FSAR is to be produced in accordance with DOE Order 5480.23, and related standards for Nuclear Facility Safety Analysis Reports. This was completed 4th Qtr. FY 1995.

Figure IV-3k.2b
Project Data Sheet
(Design and Construction Phase Funded)

1.	Title and Location of Project:	CMR Upgrades Project, Design and Construction LANL, Los Alamos, New Mexico (Continued)	2a.Project No.: 95-D-102 2b.Construction Funded

- **Engineering Assessments/CDR/EA**

Engineering Assessment--This project was completed 2nd Qtr. FY 1996.

Phase 1 funding includes the development of the CDR for those items that have been identified and prioritized as a result of the Interim Safety Analysis Report (ISAR). They are comprised of those upgrade items that are required to extend the operational life of the facility for at least another 20 years based upon safety and compliance for present and future operations. The original CDR was completed during the 3rd Qtr. FY 1995; the Supplemental CDR effort is scheduled for completion 1st Qtr. FY 1997.

An environmental assessment, including all aspects of Phase 2, has been prepared based upon the conceptual design report. This EA assessed the environmental impact of construction as represented by the Phase 2 scope of work. Approval is scheduled for 2nd Qtr. FY 1997.

Figure IV-3k.2b
Project Data Sheet
(Design and Construction Phase Funded)

1. Title and Location of Project:	CMR Upgrades Project, Design and Construction LANL, Los Alamos, New Mexico (Continued)	2a.Project No.: 95-D-102 2b.Construction Funded

9. Detail of Cost Estimate

	Item Cost	Total Cost
a. Design Phase.		$ 43,667
(1) Preliminary and Final Design costs, (Design, Drawings, and Specifications)	$ 33,667	
(2) Design Management costs @ 29.7% of (a)	10,000	
b. Construction Phase		111,814
1. Land and Land Rights	0	
2. Buildings & Improvements to Land	77,640	
3. Specialized Equipment	4,174	
4. Other (major utilities/comp items,specialized facilities, etc.)	0	
5. Removal cost less salvage	0	
6. Inspection,design and project liaison, testing, checkout and acceptance	10,000	
7. Construction Management @ 21.8% of (b)	20,000	
c. Contingencies at approximately 12 percent of above costs		18,619
1. Design Phase	8,619	
2. Construction Phase	10,000	
d. Total line item cost (Section 11.a.1.(a))		$174,100
e. LESS: Non-Agency contribution (Define in Section 12).		0
f. Total Agency Requirement (TEC)		$174,100

10. Method of Performance

Procurement will be accomplished under fixed-price subcontracts awarded on the basis of competitive bidding. Consideration will be given to cost-plus-fixed fee on decontamination and refurbishment work on the CMR. Upgrades construction will be done by fixed price contractors and the Laboratory's support services subcontractor. The operating contractor and contracted Architect-Engineers will perform construction inspection.

Figure IV-3k.2b
Project Data Sheet
(Design and Construction Phase Funded)

1. Title and Location of Project:	CMR Upgrades Project, Design and Construction LANL, Los Alamos, New Mexico (Continued)	2a.Project No.: 95-D-102 2b.Construction Funded

11. Schedule of Project Funding and Other Related Funding Requirements

	Prior Years	FY 1997	FY 1998	FY 1999	Outyear	Total
a. Total project costs (Agency Requirements)						
1. Total facility costs						
(a) Design (Section 9.a & Section 9.c.1))	$ 52,286	$ 0	$ 0	$ 0	$ 0	$ 52,286
(b) Construction (Section 9.b & Section 9.c.2)	$ 58,500	$ 21,000	$ 12,300	$ 13,000	$ 17,014	$121,814
(c) Plant, Engineering and Design (PE&D)	0	0	0	0	0	0
(d) Operating expense funded equipment.	0	0	0	0	0	0
(e) Inventories	0	0	0	0	0	0
Total facility costs (Federal and Non-Federal)	$ 110,786	$ 21,000	$ 12,300	$ 13,000	$ 17,014	$174,100
2. Other project costs						
(a) R&D necessary to complete project	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
(b) Conceptual design costs	0	0	0	0	0	0
(c) Decontamination & Decommissioning (D&D)	0	0	0	0	0	0
(d) NEPA documentation costs	0	0	0	0	0	0
(e) Other ES&H costs	0	0	0	0	0	0
(f) Other project related costs (Define in Section 12)	8,545	2,423	3,500	5,000	30,067	49,535
(g) Total other project costs	$ 8,545	$ 2,423	$ 3,500	$ 5,000	$ 30,067	$ 49,535
Total project costs	$ 119,331	$ 23,423	$ 15,800	$ 18,000	$ 47,081	$223,635
3. LESS: Non-Agency contribution (define Federal vs non-Federal)	0	0	0	0	0	0
Agency total project costs (TPC)	$ 119,332	$ 23,423	$ 15,800	$ 18,000	$ 47,081	$223,635

b. Related Lifecycle costs (estimated life of project--40 years; FY 1995 $)	
1. Annual facility operating costs (staff, utilities,etc.)	$ 10,000
2. Annual facility maintenance/repair costs	2,500
3. Annual programmatic effort related to facility	30,000
4. Other Annual Costs (define in Section 12)	1,000
Total related lifecycle costs	$ 46,950

Figure IV-3k.2b
Project Data Sheet
(Design and Construction Phase Funded)

12. Narrative Explanation of Total Project Funding and Other Related Funding Requirements

a. Total project funding
   1. Total facility costs
      (a) Line item -- Narrative not required.
      (b) PE&D -- None.
      (c) Operating expense funded equipment -- Narrative not required.
      (d) Inventories -- None.

   2. Other project costs
      (a) R&D necessary to complete construction -- No research and development is necessary to establish the specific design and construction features.
      (b) Conceptual design -- None. Phase 1 line item. [b]
      (c) Decontamination and Decommissioning (D&D) -- None.
      (d) NEPA documentation -- None. Phase 1 line item costs include NEPA documentation costs.
      (e) Other project related costs -- Operational testing and acceptance, including the Operational Readiness Review has been allowed on selected major system upgrades. Training materials, programs, and test/certification will be updated to reflect the change in site operations resulting from selected systems upgrades becoming operational. See also paragraph 17, Environmental Impacts, below.

b. Related annual costs
   1. Annual facility operating costs -- The CMR facility were estimated from the FY 1995 budget requirements for CMR operations.
   2. Annual facility maintenance/repair costs -- These are based upon current budget requirements for CMR maintenance.
   3. Annual programmatic effort related to facility -- The programmatic effort which relies upon the direct and primary use of the CMR facilities was established at the FY 1992 level-of-effort based on the unique capabilities of handling radioactive materials. This assumes a constant level-of-effort in these programs.
   4. Other Annual Costs -- These are anticipated to be approximately $1,000,000/year based upon current CMR programmatic needs.

[b] CDR and Environmental Assessment costs are carried as part of the Phase 1 Engineering Assessment/Phase 2 Planning Activities and are broken out for clarify.

Figure IV-3k.2b
Project Data Sheet
(Design and Construction Phase Funded)

DEFENSE ASSET ACQUISITION
(Tabular dollars in thousands. Narrative material in whole dollars.)

Defense Programs Stockpile Management

1.	Title and Location of Project:	CMR Upgrades Project Los Alamos National Laboratory, Los Alamos, New Mexico	2a. Project No.: 95-D-102 2b. Construction Funded

SIGNIFICANT CHANGES

- Total estimated cost for Processed Chilled Water, Main Vault, Acid Vents and Drains, and Exhaust Duct Washdown Recycle System Upgrades have been adjusted to reflect completed CDR estimates.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
(Changes from FYCY Congressional Budget Request are denoted with a vertical line in left margin.)

DEFENSE ASSET ACQUISITION
(Tabular dollars in thousands. Narrative material in whole dollars.)

Defense Programs Stockpile Stewardship

1.	Title and Location of Project:	CMR Upgrades Project Los Alamos National Laboratory, Los Alamos, New Mexico	2a. Project No.: 95-D-102 2b. Construction Funded	
		Preliminary Estimate	Title I Baseline	Current Baseline Estimate
3a.	Date A-E Work Initiated, (Title I Design Start Scheduled):	1st Qtr. FY 1992	1st Qtr. FY 1992	1st Qtr. FY 1992
3b.	A-E Work (Titles I & II) Duration:	52 months	52 months	52 months
4a.	Date physical Construction Starts:	3rd Qtr. FY 1993	3rd Qtr FY 1993	3rd Qtr. FY 1993
4b.	Date Construction Ends:	3rd Qtr. FY 2002	3rd Qtr FY 2002	3rd Qtr. FY 2002
		Preliminary Estimate	Title I Baseline	Current Baseline Estimate[a]
5.	Total Estimated Cost (TEC) --	$174,100	$174,100	$174,100
6.	Total Project Cost (TPC) --	$223,635	$223,635	$223,635

7. Financial Schedule (Federal Funds):

Fiscal Year	Appropriations	Adjustments	Obligations	Costs
1992	$ 12,000	0	$ 12,000	$ 2,757
1993	27,000	0	27,000	5,061
1994	29,750	0	29,750	10,504
1995	28,036	0	28,036	13,363
1996	22,000	0	22,000	14,909
1997	20,000	0	18,000	16,270
1999	13,000	0	13,000	19,080
1999	11,000	0	11,500	27,400
2000	6,300	0	6,300	27,000
2001	3,500	0	3,500	20,450
2002	3,014	0	3,014	17,306

[a]Current Baseline Estimate is the latest baseline which reflects the approved changes to the Title I baseline.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

1.	Title and Location of Project: . . . . . CMR Upgrades Project, Los Alamos National Laboratory, Los Alamos, New Mexico (Continued) . . . . . 2b.	2a. Project No.: 95-D-102 Construction Funded

8. Project Description, Justification and Scope

The Chemistry and Metallurgy Research (CMR) Building is the largest structure at the Los Alamos National Laboratory (550,000 square feet). Construction of the CMR Building was completed in 1952. Most of the major mechanical and electrical equipment has reached the end of its design life.

Since its construction 40 years ago, the CMR Building has been used for research, development, and analytical work with plutonium, uranium and their alloys, and other materials in support of weapons, nuclear materials, and other Laboratory programs. This work continues to be essential to the nation's weapons program, with the principal activities in the building being in support of the plutonium research, development, and demonstration activities conducted at the Laboratory's Plutonium Handling Facility at TA-55. The activities that are critical to these plutonium operations are:

- Essential daily analytical chemistry and metallurgical services on plutonium and other actinides.
  - Analyses of plutonium metal preparations for the Laboratory's Weapons Research, Development, and Test Programs.
  - Analyses required for development and demonstration of new and improved processing methods for scrap recovery.
  - Analyses required for accountability and verification of material received or shipped and for on-site transfers.
- The CMR Building future role is also essential for support of several major Defense Programs areas which include:
  - Enhanced Safety and Reliability of Nuclear Weapons
  - Lead Technical Laboratory for Pu and U Processing
  - Weapons Dismantlement and Component Storage

The primary purpose of this project is to upgrade facility systems and infrastructure that has been in continuous operation for 40 years and are near the end of their useful life. Such upgrading will ensure the continued safety of the public and Laboratory employees and increase the operational safety, reliability and security of essential activities. Increased safety, reliability, and security are critical to the continued operation of the Laboratory's Stockpile Stewardship Programs and other national defense programs.

The Special Nuclear Materials Laboratory (SNML) Project was authorized (88-D-105) to replace the CMR Building at Los Alamos National Laboratory. In FY 1990, the project was put on hold pending a substantive review of the project including other potential options for providing the necessary specialized Laboratory space. As the planned completion date of the SNML continued to be pushed back, it became necessary to provide interim upgrades to CMR to allow its safe and reliable use in the interim period; $6,250,000 was reprogrammed (91-R-14, executed in FY 1992) from the SNML line item to Project 90-D-102, Nuclear Weapons Research, Development and Testing Facilities Revitalization, Phase III (WRD&T Revit., 3), subproject CMR Upgrades (Phase 1). Later in FY 1991, it was decided not to proceed with the construction of SNML but provide interim upgrades, to CMR (Phase 1) and to identify further upgrades based on safety and risk assessment, for continued long-term operations. The result of these safety and risk assessments is an Interim Safety Analysis Report (ISAR). The findings of the ISAR are the basis for the scope of CMR Upgrades Phases 2 and 3, which were combined with Phase 1 to produce this stand alone line item in FY 1995.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

The ISAR includes an analysis of risks associated with natural phenomena design basis accidents, current operations, and comparison to criteria (6430.1A). The ISAR was utilized as the basis to identify and prioritize upgrades that would be required to continue operations in a safe, secure, and reliable manner for at least the next 20 years.

8. Project Description, Justification and Scope (Continued)

a. CMR Phase 1 Upgrade

TEC	Previous	FY 1996	FY 1997	FY 1998	Outyear	Construction Start - Completion Dates
$51,600	$41,800	$4,800	$4,400	$600	$0	3rd Qtr. FY 1993 - 3rd Qtr. FY 1998

* * *

	Previous	FY 1996	FY 1997	FY 1998	FY 1999
Obligations [b]	$41,800	$4,800	$4,400	$600	$0

Phase 1 was formerly part of WRD&T Revit, 3 with a TEC of $49,500,000. Based upon the 1995 baseline change proposal and the completion of the CDR, the TEC changed to $51,600,000 and completion date changed from 3rd Qtr. FY 1996 to 3rd Qtr. FY 1998.

Phase 1 of this project consists of required and urgent capital equipment replacements and upgrades in the CMR Building. Individual tasks were initially identified by a panel commissioned by the Deputy Assistant Secretary for Military Application (DASMA) in July 1990, as the minimum essential effort required to maintain operations in the CMR Building while a Safety Analysis Report (SAR) was prepared.

* The FY 1998 funds for Phase 1 will be used to complete Phase 1 construction activities. Most Phase 1 construction activities will be substantially completed 3rd Qtr. FY 1997.

The equipment replacements and upgrades included:

- **Continuous Air Monitor (CAM) Installations**

  Install a new CAM system in the Wings 3, 5, 7, and 9 laboratories. Upgrades include installation of CAMs, Fixed head Air Samplers (FAS), and glovebox hand monitors as required by DOE Order 5480.11 and AR 3-7. Remote monitoring capabilities at the Health Physics office and a data logging system are also included. Existing vacuum systems in Wings 3, 5, and 7 will be utilized while the vacuum system in Wing 9 will be expanded. This project is complete.

b/ This obligation profile is added as an explanation of the proposed obligations for this subproject, based on the new full funding initiative. Item 7, Financial Schedule, does not show obligations for individual subprojects.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

- **HVAC Blowers and Motors**

  Replace existing laboratory exhaust fans in the CMR Building and provide vibration analysis for approximately twenty exhaust fans in the CMR Building. Immediate needs are to replace the 200 HP exhaust fans on the first floor of the filter towers in Wings 3, 5, and 7. Other exhaust fans may require replacement contingent on the scope of the Phase 2 Confinement Zone Separation upgrade. This subproject is 97 percent complete.

- **Electrical Upgrades**

  The Distribution Analysis and Power Planning Evaluation and Reporting (DAPPER) software will be used for analysis, calculations, and record drawings for all electrical upgrades. Provisions to incorporate a future facility computer monitoring and limited control system will be provided as part of the Electrical Upgrades.

8. Project Description, Justification and Scope (Continued)

Exterior Electrical Upgrades: Replace inadequately sized exterior sectionalizing switches, eliminate existing exterior single point failures, modify exterior underground electrical system to allow switching and maintenance functions, upgrade existing controls and correct deficiencies to the existing administration wing, and Wings 1, 3, 4, and 9 substations. This portion of Electrical Upgrades is scheduled for completion 3rd Qtr. FY 1997.

Substations Upgrade: Replace substations in Wings 2, 5, and 7. This portion of Electrical Upgrades is scheduled for completion 2nd Qtr. FY 1997.

Wing Electrical Upgrades: Upgrade the interior low voltage power distribution system for all wings except 2 and 4 in the CMR Building. This includes the replacement of power and lighting panel boards, laboratory power panel boards, bus ways, motor control centers, replacement of all obsolete branch and feeder wiring systems, rewiring of laboratories, and upgrading the emergency and exit lighting systems. This portion of Electrical Upgrades is scheduled for completion 2nd Qtr. FY 1997.

Electrical Upgrades to Support Safe Standby, Wings 2 and 4: Upgrade the interior low voltage power distribution system in Wings 2 and 4, which is necessary for safety systems. This portion of Electrical Upgrades is scheduled for completion 4th Qtr. FY 1998.

Spinal Corridor Cable Tray: Provide a cable tray system in the attic spinal corridor. This portion of Electrical Upgrades was completed 1st Qtr. FY 1996.

Grounding and Lightning Protection: Upgrade the CMR Building grounding and lightning protection systems. This portion of Electrical Upgrades is scheduled for completion 1st Qtr. FY 1997.

- **Stack Monitors Upgrade**

  Provide a stack effluent monitoring system for the CMR Building that is in compliance with DOE and EPA requirements. Each stack will be evaluated to determine the type of monitoring required. Each stack system will be stand alone, consisting of in-line samplers, CAMS, vacuum pumps, and associated tubing, wiring, and signal processing

equipment. This upgrade also includes a data collection system from all of the stack CAM's to the CMR operations room and the ES&H operations room. The stack effluent monitoring will be in compliance with 40 CFR 61 and DOE Order 6430.1A. This subproject is currently estimated to be 97 percent complete.

- **Uninterruptable Power Supply (UPS) Installation**

This Upgrade is in support of the Stack Monitors Upgrade. There will be one UPS supporting the stack monitoring data collection computer systems. The UPS will be capable of providing backup power to the stack effluent monitoring systems for a 4 hour period. This subproject is 99 percent complete.

- **Duct Modification**

Backdraft Dampers: Provide positive shutoff intake backdraft dampers in the supply air ductwork in Wings 2, 3, 4, 5, 7, and 9. This subproject is 92 percent complete.

Duct Washdown Upgrade: Upgrade the existing exhaust duct washdown system in Wings 3, 5, and 7. This includes replacement of piping, valves, and spray heads and installation of new flow measurement devices. This portion of the Duct Modifications is scheduled for completion 4th Qtr. FY 1996.

1. Title and Location of Project: . . . . . CMR Upgrades Project, Los Alamos National Laboratory, Los Alamos, New Mexico (Continued) . . . . . 2b.	2a. Project No.: 95-D-102 Construction Funded

8. Project Description, Justification and Scope (Continued)

- **Sanitary Sewer Upgrades**

* This subproject was completed 3rd Quarter of FY 1994.

- **Acid Vents and Drains Upgrades**

Aging piping and a lack of gradient in the acid drain system in the basement of the CMR Building has led to corrosion and clogging of the system. This upgrade includes evaluation and documentation of the existing system, prioritization of the system deficiencies, and cost estimates to correct each deficiency for Wings 3, 5, and 7. Construction will include replacement of piping and components including threaded nipples, fittings, valves, flanged fittings, and gaskets with compatible new components. Remaining system
* replacement will be incorporated in Phase 2. This subproject is scheduled for completion 4th Qtr. FY 1998.

- **Fire Hazard Analysis (Formerly Fire Protection Upgrades)**

* A Fire Hazard Analysis (FHA) on the CMR Building will be completed in accordance with DOE Order 5480.7A. A cost benefit analysis will be performed on the results of the
* FHA and the existing National Fire Protection Act (NFPA) 101 analysis to prioritize deficiencies. Identified required upgrades will be done as part of Phase 2. This subproject was completed during the 2nd Qtr. FY 1996.

- **Safety Analysis Report**

Perform a complete safety analysis for the CMR Building operations. Activities include analysis, documentation, and review. Complete an Interim Safety Analysis Report (ISAR) to aid in determining the basis for long term upgrades for the CMR Building. Produce a Final Safety Analysis Report (FSAR) to define the safety envelope and the authorization basis for the operation of the CMR Building. The FSAR is to be produced in accordance with DOE Order 5480.23, and related standards for Nuclear Facility
* Safety Analysis Reports. This was completed 4th Qtr. FY 1995.

- **Engineering Assessments/CDR/EA**

* Engineering Assessment--This project was completed 2nd Qtr. FY 1996.

Phase 1 funding includes the development of the CDR for those items that have been identified and prioritized as a result of the Interim Safety Analysis Report (ISAR). They are comprised of those upgrade items that are required to extend the operational life of the facility for at least another 20 years based upon safety and compliance for present and
* future operations. The original CDR was completed during the 3rd Qtr. FY 1995; the Supplemental CDR effort is scheduled for completion 1st Qtr. FY 1997.

* An environmental assessment, including all aspects of Phase 2, has been prepared based upon the conceptual design report. This EA assessed the environmental impact of
* construction as represented by the Phase 2 scope of work. Approval is scheduled for 2nd Qtr. FY 1997.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

1. Title and Location of Project: . . . . . CMR Upgrades Project, Los Alamos National Laboratory, Los Alamos, New Mexico (Continued) . . . . . 2b.	2a. Project No.: 95-D-102 Construction Funded

8. Project Description, Justification and Scope (Continued)

b. CMR Phase 2 Upgrade

The Phase 2 components are needed to maintain infrastructure, improve safety for public and workers, and enhance environmental management.

TEC	Previous	FY 1996	FY 1997	FY 1998	Outyear	Construction Start - Completion Dates
* $122,500		$0	$6,140	$10,600	$105,760	$0
* 2nd Qtr. FY 1997 - 4th Qtr. FY 2002						

	Previous	FY 1996	FY 1997	FY 1998	FY 1999
* * * Obligations [c]	$0	$6,140	$10,600	$15,100	$90,660

Based upon completion of the CDR for the Phase 2 and 3 scope, the TEC for this phase is increased from $85,000,000 to $122,500,000. The construction start date changed from 2nd Qtr. FY 1996 to 2nd Qtr. FY 1997 and the end date changed from 4th Qtr. FY 2003 to 4th Qtr. FY 2002. (Phase 3 scope, cost, and schedule are contingent upon future programmatic requirements based upon the results of the Programmatic Environmental Impact Statement (PEIS) and Site Wide Environmental Impact Statement (SWEIS). Therefore, no funds are requested for Phase 3.

* The FY 1998 funds will be used to complete Phase 2 activities.

The additional long term upgrades developed by the Phase 2 CDR process are:

- **Seismic and Tertiary Confinement (Wings 3, 5, 7, and 9)**

* * * Structural strengthening to meet the seismic criteria for hazard Category 2 operations. Modification of the existing exterior structural openings in these wings to create a tertiary confinement barrier. Structural strengthening of the Administration Wing (which houses the Operations Center) to meet the seismic criteria for worker safety. Hardening of building openings to security requirements which are also being modified for tertiary confinements. These openings include doors, windows, louvers, etc.

- **Ventilation and Confinement Zone Separation (Wings 3, 5, 7, and 9)**

---

c/ This obligation profile is added as an explanation of the proposed obligations for this subproject, based on the new full funding initiative. Item 7, Financial Schedule, does not show obligations for individual subprojects.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

1. Title and Location of Project: . . . . . CMR Upgrades Project, Los Alamos National Laboratory, Los Alamos, New Mexico (Continued) . . . . . 2b.	2a. Project No.: 95-D-102 Construction Funded

Renovate the mechanical systems and the related control systems to replace components that are near the end of their useful lives and to improve confinement zone separation throughout each Wing. Architecturally modifying Wings 3, 5, and 7 to create a secondary confinement barrier. Providing an alarm for each enclosure to alert workers when the mechanical systems are not operating according to safety standards for the facility. Providing a central, chilled water plant to support the mechanical systems' renovations to the building.

- **Standby Power** (Wings 3, 5, 7, and 9)

Provide standby electrical power to operate the most important mechanical systems at a reduced level sufficient to maintain negative pressure in the laboratory enclosures. This will reduce possibility of spread of contamination due to the loss of offsite power to the ventilation system.

- Communications (Wings 3, 5, 7, and 9)

Improve emergency communications systems thereby improving worker safety.

- **Wing 1 (HVAC) Upgrades/Wing 1 Interim Decontamination**

Decontaminate the unoccupied, contaminated laboratories in Wing 1, modifying the HVAC exterior intake and exhaust locations for Wing 1 to improve worker health and safety.

- **Operations Center** (Administration Wing)

Improve the ergonomics and reliability of the building's central monitoring and control capabilities. Install transfer capability and wiring from the standby power generator to the CMR Operation Center to support all functions or systems required to recover the facility after significant accidents.

- **Process Chilled Water (Wings 3, 5, and 7)**

Replace the 2 existing 40 year old evaporative coolers in each Wing with a single refrigeration unit to provide chilled water for process equipment. Also, replace the existing 40 year old process chilled water piping system with a new piping system.

- **Main Vault**

CAMs - Install new Canberra CAMs in the vault, ASM 2000 controllers in the anteroom, and incorporate remote monitoring (similar to Wing CAM systems) to the ES&H office. This upgrade would utilize the generic design established for the Wing CAMs.

- **Acid Vents and Drains (Wings 3, 5, and 7)**

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

Correct deficiencies not covered in Phase 1 upgrades (Phase 1 addresses major leaks and flanges). Correct area with inadequate slope, replace branches and risers to laboratories as required, and upgrade the ventilation of the system.

* • **Fire Protection Upgrades (Entire Facility)**

Correct fire protection system deficiencies as identified in the 1992 NFPA 101 analysis, and the Fire Hazard Analysis (to be completed in Phase 1). Deficiencies will be prioritized in a cost benefit analysis which will be completed in Phase 1. Examples of current identified deficiencies are: Add check valves in fire protection risers, add backflow preventors in the sprinkler system, provide fire dampers in duct penetrations, replace fire alarm panels.

- **Exhaust Duct Washdown Recycling System (Wings 3, 5, and 7)**

This recycling system will significantly reduce the waste stream from the facility. The reduction in the waste stream will reduce the demands on the current waste treatment plant.

- **Wings 2 and 4 Safe Standby**

This upgrade includes the costs necessary to establish a safe standby condition for Wings 2 and 4 pending future programmatic use. Included are identification of safety systems required for safe standby deactivation/decontamination of abandoned systems and gloveboxes, removal of all radioactive materials and chemicals, and removal or stabilization of all loose contamination.

- **ES&H Support Activities**

* Additional enhanced ES&H support activities based on the lessons learned from Phase 1 are being incorporated. These efforts include waste management, waste minimization, ES&H support, risk analysis, and ES&H equipment including personnel protective equipment.

c. <u>CMR Phase 3 Upgrades</u>

Phase 3 scope, cost, and schedule are contingent upon future programmatic requirements based upon the results of the Programmatic Environmental Impact Statement (PEIS) and Site Wide Environmental Impact Statement (SWEIS). Therefore, no funds are requested for Phase 3 in FY 1998 and no specific funding has been allocated for the upgrade in the Departments' Five-Year Plan.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

1. Title and Location of Project: . . . . . CMR Upgrades Project, Los Alamos National Laboratory, Los Alamos, New Mexico (Continued) . . . . . 2b.	2a. Project No.: 95-D-102 Construction Funded

9. Detail of Cost Estimate

	Item Cost	Total Cost
a. Design Phase.		$ 43,667
(1) Preliminary and Final Design costs, (Design, Drawings, and Specifications)	$ 33,667	
(2) Design Management costs @ 29.7% of (a)	10,000	
b. Construction Phase		111,814
1. Land and Land Rights	0	
2. Buildings & Improvements to Land	77,640	
3. Specialized Equipment	4,174	
4. Other (major utilities/comp items,specialized facilities, etc.)	0	
5. Removal cost less salvage	0	
6. Inspection,design and project liaison, testing, checkout and acceptance	10,000	
7. Construction Management @ 21.8% of (b)	20,000	
c. Contingencies at approximately 12 percent of above costs		18,619
1. Design Phase	8,619	
2. Construction Phase	10,000	
d. Total line item cost (Section 11.a.1.(a))		$174,100
e. LESS: Non-Agency contribution (Define in Section 12).		0
f. Total Agency Requirement (TEC)		$174,100

10. Method of Performance

Procurement will be accomplished under fixed-price subcontracts awarded on the basis of competitive bidding. Consideration will be given to cost-plus-fixed fee on decontamination and refurbishment work on the CMR. Upgrades construction will be done by fixed price contractors and the Laboratory's support services subcontractor. The operating contractor and contracted Architect-Engineers will perform construction inspection.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

1. Title and Location of Project: CMR Upgrades Project, Los Alamos National Laboratory, Los Alamos, New Mexico (Continued) 2b.	2a. Project No.: 95-D-102 Construction Funded

11. Schedule of Project Funding and Other Related Funding Requirements

	Prior Years	FY 1997	FY 1998	FY 1999	Outyear	Total
a. Total project costs (Agency Requirements)						
1. Total facility costs						
(a) Design (Section 9.a & Section 9.c.1))	$ 52,286	$ 0	$ 0	$ 0	$ 0	$ 52,286
(b) Construction (Section 9.b & Section 9.c.2)	$ 58,500	$ 21,000	$ 12,300	$ 13,000	$ 17,014	$121,814
(c) Plant, Engineering and Design (PE&D)	0	0	0	0	0	0
(d) Operating expense funded equipment.	0	0	0	0	0	0
(e) Inventories	0	0	0	0	0	0
Total facility costs (Federal and Non-Federal)	$ 110,786	$ 21,000	$ 12,300	$ 13,000	$ 17,014	$174,100
2. Other project costs						
(a) R&D necessary to complete project	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
(b) Conceptual design costs	0	0	0	0	0	0
(c) Decontamination & Decommissioning (D&D)	0	0	0	0	0	0
(d) NEPA documentation costs	0	0	0	0	0	0
(e) Other ES&H costs	0	0	0	0	0	0
(f) Other project related costs (Define in Section 12)	8,545	2,423	3,500	5,000	30,067	49,535
(g) Total other project costs	$ 8,545	$ 2,423	$ 3,500	$ 5,000	$ 30,067	$ 49,535
Total project costs	$ 119,331	$ 23,423	$ 15,800	$ 18,000	$ 47,081	$223,635
3. LESS: Non-Agency contribution (define Federal vs non-Federal)	0	0	0	0	0	0
Agency total project costs (TPC)	$ 119,332	$ 23,423	$ 15,800	$ 18,000	$ 47,081	$223,635

b. Related Lifecycle costs (estimated life of project--40 years; FY 1995 $)	
1. Annual facility operating costs (staff, utilities,etc.)	$ 10,000
2. Annual facility maintenance/repair costs	2,500
3. Annual programmatic effort related to facility	30,000
4. Other Annual Costs (define in Section 12)	1,000
Total Annual related lifecycle costs	$ 46,950

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

1.	Title and Location of Project: . . . . . CMR Upgrades Project, Los Alamos National Laboratory, Los Alamos, New Mexico (Continued) . . . . . 2b.	2a. Project No.: 95-D-102 Construction Funded

12. Narrative Explanation of Total Project Funding and Other Related Funding Requirements

a. Total project funding
   1. Total facility costs
      (a) Line item -- Narrative not required.
      (b) PE&D -- None.
      (c) Operating expense funded equipment -- Narrative not required.
      (d) Inventories -- None.

   2. Other project costs
      (a) R&D necessary to complete construction -- No research and development is necessary to establish the specific design and construction features.
      (b) Conceptual design -- None. Phase 1 line item. [d]
      (c) Decontamination and Decommissioning (D&D) -- None.
      (d) NEPA documentation -- None. Phase 1 line item costs include NEPA documentation costs.
      (e) Other project related costs -- Operational testing and acceptance, including the Operational Readiness Review has been allowed on selected major system upgrades. Training materials, programs, and test/certification will be updated to reflect the change in site operations resulting from selected systems upgrades becoming operational. See also paragraph 17, Environmental Impacts, below.

b. Related annual costs
   1. Facility operating costs -- The CMR facility were estimated from the FY 1995 budget requirements for CMR operations.
   2. Facility maintenance and repair costs -- These are based upon current budget requirements for CMR maintenance.
   3. Programmatic operating expenses directly related to the facility -- The programmatic effort which relies upon the direct and primary use of the CMR facilities was established at the FY 1992 level-of-effort based on the unique capabilities of handling radioactive materials. This assumes a constant level-of-effort in these programs.
   4. Capital equipment requirements for programmatic support were estimated at $1,000,000/year based upon recent trends in CMR programmatic needs.
   5. GPP or other construction related to programmatic effort -- These are anticipated to be approximately $1,000,000/year based upon current CMR programmatic needs.
   6. Utility costs -- These are estimated at $2,450,000/year based upon current trends in CMR operations.
   7. Other costs -- None anticipated.

[d] CDR and Environmental Assessment costs are carried as part of the Phase 1 Engineering Assessment/Phase 2 Planning Activities and are broken out for clarify.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

1.	Title and Location of Project: . . . . . CMR Upgrades Project, Los Alamos National Laboratory, Los Alamos, New Mexico (Continued) . . . . . 2b.	2a. Project No.: 95-D-102 Construction Funded

13. Design and Construction of Federal Facilities

The total estimated cost of this project includes, where appropriate, the cost of measures necessary to assure compliance with OMB Circular No. A-106, and Executive Order No. 12088, "Federal Compliance with Pollution Control Standards"; Section 19 of the Occupational Safety and Health Act of 1970, the provisions of Executive Order No. 12196, and the related Safety and Health provisions for Federal Employees (CFR Title 29, Chapter XVII, Part 1960); and the Architectural Barriers Act of 1968." The project will be located in an area not subject to flooding determined in accordance with Executive Order 11988.

Figure IV-3k.2c
Project Data Sheet
(Design & Construction with Advance Appropriation Funding)

4. SUPPLEMENTARY JUSTIFICATIONS. The following additional reporting requirements should be submitted along with the primary justification materials to the Office of Budget by the due date specified in the FYBY Congressional Call. Each organization is responsible for determining which of the additional reporting requirements it needs to submit. This section also includes back-up data requirements for budget briefings and internal Departmental oversight. Questions regarding any of the supplemental justification materials should be directed to the designated point of contact indicated in the POC Matrix provided in the front of this chapter.

   a. Special Exhibits for Power Marketing. Typically, the Power Marketing Administrations have included in their justification material several special exhibits. PMAs should continue to prepare these exhibits to strengthen their presentation with the appropriate Congressional committees. These exhibits are:

      (1) **Transmission System Map (PMA)**. A map showing the parameters of the transmission system will be included in the Congressional justification in the format shown in Figure IV-4a.1.

      (2) **Revenues and Receipts**. A summary of revenues and receipts for the fiscal years PY, CY, BY through BY+3 should be prepared using the format shown in Figure IV-4a.2. Please note that the Gross Revenues minus Net Billing Amount should equal Total Proprietary Receipts.

      (3) **Systems Statistics**. Statistics of the power systems will be presented in the format shown in Figure IV-4a.3. Those stub entries which are not applicable to the organization preparing the exhibit need not be included in the array.

      (4) **Power Marketed, Wheeled, or Exchanged by Project**. The power marketed, wheeled, or exchanged exhibit should be prepared in the format shown in Figure IV-4a.4.

      (5) **Pending Litigation**. A table showing the litigation involving each power marketing organization will be prepared in the format shown in Figure IV-4a.5. This exhibit must be prepared even though no litigation is pending.

DEPARTMENT OF ENERGY
19BY CONGRESSIONAL BUDGET REQUEST

TRANSMISSION SYSTEM MAP (PMA)
ORGANIZATION NAME

Figure IV-4a.1
Transmission System Map (PMA)

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
POWER MARKETING ADMINISTRATION

REVENUES AND RECEIPTS
(Dollars in Thousands)

PMA name	FYPY FY BY+1	FYCY FY BY+2	FYBY FY BY+3	FY BY+4	FY BY+5
Gross Revenues	$100,000	$150,000	$200,000	$210,000	$220,000
Sale & transmission of electric energy (Site 1)	$ 70,000	$ 100,000	$120,000	$130,000	$140,000
Sale & transmission of electric energy (Site 2)	$ 30,000	$ 50,000	$ 80,000	$ 80,000	$ 80,000
etc (as applicable)					
Net billing amount credited as an offsetting receipt	-10,000	-20,000	-25,000	-25,000	-25,000
Total Proprietary Receipts	$ 90,000	$130,000	$175,000	$185,000	$195,000
Percent of sales to preference customers	39%	38%	37%	37%	37%
Energy sales and Power marketed (in billions of kilowatt hours)	7.5	7.5	7.5	7.5	7.5

Figure IV-4a.2
Revenues and Receipts

DEPARTMENT OF ENERGY
19BY CONGRESSIONAL BUDGET REQUEST
SYSTEMS STATISTICS

ORGANIZATION TITLE
(In thousands of dollars)

	19PY Actual	19CY Estimate	19BY Estimate
Generating Capacity:			
Installed Capacity (KW)	7,600,000	7,000,000	8,100,000
Leasing Capacity (KW)	----	----	----
Peak Capacity (KW)	8,000,000	8,500,000	8,520,000
Generating Stations:			
Generating Projects (No.)	12	12	12
Substations/Switchyards (No.) a/	270	265	265
Substation/Switchyards (KVA Capacity)	17,000,000	17,100,000	17,200,000
Available Energy:			
Energy Generated (Megawatt-Hours)	29,000,000	29,600,000	29,250,000
Energy Purchased (Megawatt-Hours)	6,000,000	6,100,000	6,500,000
Energy Available for Marketing (Megawatt-Hours)	35,000,000	35,700,000	35,750,000
Transmission Lines (Circuit Miles):			
800 KV	----	----	----
500 KV	94	94	94
345 KV	900	1,100	1,200
230 KV	6,000	6,000	6,300
161 KV	1,100	1.015	1,015
138 KV	300	300	300
115 KV	6,000	5,600	5,600
49 KV and Below	1,100	1,100	1,100
Total Circuit Miles	15,394	15,209	15,609

Figure IV-4a.3
Systems Statistics

DEPARTMENT OF ENERGY
19BY CONGRESSIONAL BUDGET REQUEST

POWER MARKETED, WHEELED OR EXCHANGED BY PROJECT

ORGANIZATIONAL TITLE

Project	State	No. Of Plants	Installed Capacity (KW)	19PY Actual 1/ Power (GHW)	19CY Estimated 1/ Power (GHW)	19BY Estimated 1/ Power (GHW)
Power Marketed						
Eklutna 159	Alaska		1	20,000	193	157
Snettisham 101	Alaska		1	47,200	75	92
Total, Power Marketed		2	67,200	268	249	260
Power Wheeled and Exchanged						
Eklutna 40	Alaska		1		28	40
Total, Power Wheeled and Exchanged		1		28	40	40

1/ Represents power delivered to customer in designated state.

Figure IV-4a.4
Power Marketed, Wheeled, or Exchanged by Project

DEPARTMENT OF ENERGY
19BY CONGRESSIONAL BUDGET REQUEST

PENDING LITIGATION

ORGANIZATION TITLE

Associated Electric Cooperative, Inc. v. Harris, No. XXXX-XX (D.D.C.; filed June 10, 1968) seeks declaratory and injunctive relief from the application of annual $1.6 million rate schedule transmission charge for service furnished plaintiff under contract. Plaintiff's Motion for Summary Judgement was granted by the District Court March 8, 1970. On April 18, 1971, the Court of Appeals for the District of Columbia reversed that decision, and remanded the case for resolution of issues of fact. Rehearing was denied December 16, 1974. (See Associated Electric Cooperative, Inc. v. Harris, XXX XXXX XXXX (D.C. 1974)). Plaintiff's Application for a Writ of Certiorari to the Supreme Court was denied November 16, 1975. On September 25, 1977, the District Court, following oral argument, dissolved the March 8, 1970 injunction and ordered plaintiff to begin immediate payment of the transmission charge and of one-half of the charges accrued since 1968. Formulation of an Order fixing trial issues and appointing a Special Master to take evidence is pending.

- Each Power Marketing Administration must complete this figure.
- If no pending litigation, tort action or contract claims actions are in process, enter the title of the figure and type "NONE" in the center of the page.

Figure IV-4a.5
Pending Litigation

b. Energy Information Administration (EIA) Support Cost Estimates. House Report No. 98-886, which accompanied the Interior and Related Agencies Appropriation Act for 1985, established a requirement for the Department to specifically identify the amounts transferred to the Energy Information Administration (EIA) in support of other agencies and programs together with a description of that support. Therefore, Program Offices receiving support must complete the schedule shown on Figure IV-4b and submit directly to the EIA Budget Staff, room 2H-055, on the same date draft budgets are due to the Office of Budget). This date must be met to allow EIA adequate time to incorporate this information into their budget. Questions on this requirement should be directed to EI-22 (see the Point of Contact Matrix provided at the front of this chapter).

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
SUMMARY OF SUPPORT FOR
ENERGY INFORMATION ADMINISTRATION

(dollars in thousands)

PROGRAM	FY PY Enacted	FY CY Enacted	FY BY Request
Total	_____	_____	_____

Narrative: Provide a brief explanation of the support to be provided by EIA.
Dollar amounts should not include any funds provided by EIA in carrying out the activities.

Figure IV-4b
EIA Support Summary

c. Facilities Summary (Interior Programs). The Interior Appropriations Subcommittee has requested that Interior funded DOE programs submit a Facilities Summary that lists and describes the facilities where their program activities are conducted. Programs not funded by the Interior and Related Agencies bill do not have to provide this report. Questions on this matter should be directed to the appropriate point of contact indicated in the POC Matrix in the front of this chapter.

(1) **Definition of a Facility**. For the purposes of this summary, a facility is defined as structural space containing pertinent equipment which is dedicated to a program or a process. It is not merely an investment in capital equipment. A facility may be either government-owned or contractor-owned. For example, the equipment, installed in the High Temperature Materials Laboratory (HTML), by itself would not constitute a facility. However, the HTML, including its equipment, is a facility. Conversely, the Oak Ridge National Laboratory at which the HTML is co-located, would not be a facility. National labs are not facilities, but portions of them may be.

(2) **Format**. The exhibit Figure IV-4c shows the requested format. To the extent possible this format should be used. A new sheet should be used for each decision unit, with the name of the decision unit typed under the heading (e.g., Building and Community Systems or Surface Coal Gasification). A brief explanation for each element on the exhibit follows:

(3) **Explanation of Elements in the Exhibit**:

(a) Facility: provide the complete name (e.g., LaPorte Liquid Phase Methanol PDU)

(b) Description/Capability: describe the facility, its purpose, scale (e.g., bench, proof- of-concept), status (e.g., in operation, mothballed) and capability (e.g., 100 tons/day).

(c) Location: City and State and if located at a national lab or ETC, include that also.

(d) Ownership/Title Vested in: list under each heading the appropriate portion(s) of the facility and the land upon which it is built. For example: “DOE owns equipment only/site owned by Air Products”. If there are any funds set aside by the Department or anyone else for mothballing, dismantlement, disposal or termination liability, the amount should be shown in parenthesis in tenths of millions under the appropriate heading.

(e) Investment through FYPY: provide the amount invested, both R&D and capital, by Government and Industry.

(f) Funding Support Estimate: provide an estimate of the same information for FYCY, and FYBY.

Department of Energy
FYBY Congressional Budget Request
Facilities Summary

Appropriation Title
Organization Title
Decision Unit Title

Facility	Description / Capability	Location	Ownership-Title Vested In		Investment through FY PY ($M)		Funding Support Estimate			
							FY CY		FY BY	
			Gov't Agency	Other	R&D	Capital	R&D	Capital	R&D	Capital
							Indus/Gov't	Indus/Gov't	Indus/Gov't	Indus/Gov't

d. Economic Regulatory Administration Major Program Budget Summary. Senate Report 98-578, which accompanied the FY 1985 Interior and Related Agencies Appropriations Act, established a requirement for the Economic Regulatory Administration (ERA) to provide a schedule showing funding, FTEs and major accomplishments for fiscal years PY, CY and BY for each major program division. A sample format of a schedule previously submitted to the Subcommittee staff is shown in Figure IV-4d. ERA should prepare this schedule for submission with each year's Congressional budget request. Questions on this matter should be directed to the Conservation, Administration and Regulation Team (CR-14), see the POC Matrix for the designated point of contact name and phone number.

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

APPROPRIATIONS/FTE'S/ACCOMPLISHMENTS
Economic Regulatory Administration

THE DATA IN THIS EXAMPLE IS FROM THE FY 1991 CONGRESSIONAL BUDGET REQUEST. A COMPARABLE SCHEDULE IS TO BE PREPARED FOR THE FYBY BUDGET.

Compliance	FYPY	FYCY	FYBY
o Appropriation	$12,511	$11,674	$10,316
o Full-time Equivalents	128	108	99
o Major Refiner PRO's Issued	1	0	0
o Other PRO's Issued	3	1	0
o Negotiated Settlements (Cases)	49	25-40	25-40
o Administrative Litigation (Cases at start of FY)	93	60	30-35
o Judicial Litigation (Cases at start of FY)	111	81	70-75
o Monitor Remedial and Consent Orders	283	215	175
Program Administration			
o Appropriation	$712	$761	$676
o Full-time Equivalents	10	9	8
Total Appropriation	$13,223	$12,435	$10,992
Total Full-time Equivalents	138	117	107

Figure IV-4d
ERA Major Program Budget Summary

e. Natural Gas Program. This reporting requirement is to be prepared by Fossil Energy. The Department has been directed by the Interior and Related Agencies Appropriations Subcommittee staff to include a natural gas program crosscut in the FYBY Congressional Budget Request. Figure IV-4e is the format to be used in completing the data for the PY, CY and BY. The Energy Research contact (Ralph De Lorenzo) and the Energy Efficiency and Renewable Energy contact (Fred Glatstein) should provide input to the lead organization Fossil Energy, (Charles Roy) by the date specified in the FYBY Congressional Call. Questions should be directed to the point of contact contained in the Point of Contact Matrix provided at the front of this chapter.

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
NATURAL GAS R&D PROGRAM CROSSCUT
Requested vs Appropriated for FYPY-FYBY
(Dollars in millions)

PROGRAM SECTORS	TOTAL DOE FYPY FYCY FYBY	TOTAL FE FYPY FYCY FYBY	TOTAL CE FYPY FYCY FYBY	TOTAL ER FYPY FYCY FYBY
Resource and Extraction Appropriated Requested * Conventional Appropriated Requested * Unconventional Appropriated Requested * Enviro/Long Range Res. Appropriated Requested * Other Appropriated Requested				
Delivery and Storage Appropriated Requested				
Utilization Appropriated Requested * Combustion Systems Appropriated Requested * Heat Pumps (heating & cooling) Appropriated Requested * Gas Turbines Appropriated Requested * Natural Gas Vehicles Appropriated Requested * Fuel Cells Appropriated Requested * Gas-to-Liquids Appropriated Requested * Other Appropriated Requested				
Environ. and Regulatory Impact Appropriated Requested				
Total Appropriated Requested				

Figure IV-4e
Natural Gas Program Crosscut

f. Program Funding by Contractor & Location System (PFCLS). PFCLS is an automated PC based system that is distributed to program offices by the Office of Budget to assist in the preparation of Laboratory and State Tables. The program offices report program funding (i.e., appropriations plus use of prior year balances) by account, organization, program, decision unit, expense type, Laboratory/Plant/ or other Installation (LPI), operations office, contractor, city, state, and congressional district.

(1) Program offices are required to submit PFCLS data that **tie directly to the appropriated funding levels contained in the control table issued by the Office of Budget**. The FYPY column must reflect the final adjusted appropriation plus use of approved prior year balances. The FYCY column must reflect the current adjusted appropriation plus use of approved prior year balances. The FYBY column must reflect the congressional request plus any planned use of prior year balances.

(2) As an alternative to the use of PFCLS, the Budget Analysis, Review, and Reporting System (BARRS) may be used to input your program funding by contractor and location data. BARRS facilitates entry of data via pop-up pick lists for LPIs and contractors. The city, state, and congressional district are automatically added with the selection of a contractor. However, these fields may be changed, if the actual location of work is different.

(3) All program funding should be reported to the locations expected to receive the funding. The funding identified for each LPI should match the budget justification materials (i.e., Program Funding by Site Report). **Washington Headquarters should not be used as a holder for undistributed funds.**

(5) A diskette of your data and two copies of your report should be sent to the Office of Corporate Financial Systems (CR-60) in the Office of Budget when the final budget submissions are due. Both PFCLS and BARRS have report options to produce the report format requested. For assistance in responding to this request see the Point of Contact Matrix provided at the front of this chapter.

PROGRAM FUNDING BY CONTRACTOR AND LOCATION
COLUMN DEFINITIONS

The following column definitions should be followed when preparing the exhibit shown in Figure IV-4f.1 or when updating your data via PFCLS.

Column 1 - Two character code that identifies the appropriation fund type.

Column 2 - Two digit numeric code that identifies the program.

Column 3 - Two digit numeric code that identifies the subprogram or activity.

Column 4 - Two character code that identifies the expense type such as operating expense (OE), capital equipment (CE), accelerator improvement project (AI), general plant project (GP), and line item construction (LI).

Column 5 - Five character code that identifies the contractor.

Column 6 - Five character code that identifies the Laboratory/Plant or other Installation.

Column 7 - Two character code that identifies the DOE office having cognizance over program activities or specific facilities.

Column 8 - Five character code that identifies the city.

Column 9 - Two character code that identifies the state.

Column 10 - Two digit numeric code that identifies the congressional district.

Column 11 - Contractor name for the code in column 5.

Column 12 - Laboratory/Plant/other Installation name for the code in column 6.

Column 13 - Prior Year (BY - 2) program funding ($ in thousands).

Column 14 - Current Year (BY - 1) program funding ($ in thousands).

Column 15 - Budget Year Request program funding ($ in thousands).

Column 16 - Outyear Request program funding ($ in thousands).

Column 17 - Record number identifies the record to update.

NOTE: Amounts shown in columns 13, 14, and 15 should tie to the Office of Budget Control Table and the Program Funding by Site Schedule.

g. Estimates of Proprietary Receipts. All organizations with proprietary receipts must submit a receipts estimate for each receipt account for FYPY through FYBY+3. Congress will closely examine these estimated amounts. Receipt/Collection data for FYPY should agree with the actuals shown by Departmental Accounting and the Department of Treasury. Receipt amounts differing from those in the FYBY Control Table must be reported to the Budget Formulation Team by the cut off-date specified in the Congressional Call. Changes should be made by marking-up a Control or Statistical Table as soon as changes are available. Receipt estimates should reflect the latest economic assumptions and be developed in accordance with the provisions of Section 15.10 of OMB Circular A-11. The Control Table numbers will be entered into OMB's MAX System and from there, are printed in the President's Budget to Congress.

h. Staffing Guidance and Requirements

(1) Full-time Equivalent Control Tables, at the decision unit level of detail, will be made available in EMPRIS by the Office of Organization and Management (HR-61) soon after final staffing levels are determined. All justification materials must be in agreement with these controls. Staffing control tables may be accessed in the EMPRIS Budget Module or by contacting the Staffing Management Branch (HR-61). Questions regarding staffing levels should also be directed to HR-61 (see the Point of Contact Matrix provided at the front of this chapter).

(2) Guidance regarding Personnel Summary requirements will be provided by HR-61 in a separate memorandum.

(3) Staffing justifications are to be incorporated into the program direction sections of your budget justifications.

(4) **Special Staffing Exhibit**. This reporting request only applies to Fossil Energy and Energy Efficiency. The Interior Appropriations Subcommittee staff has requested that above mentioned programs include staffing summaries in their printed budget material. The Fossil Energy R&D exhibit should be prepared as shown in Figure IV-4h.1. A separate exhibit should be prepared for Fossil Energy R&D as a whole and for each of the following organizations: Morgantown Energy Technology Center (including LPO and GPO), Pittsburgh Energy Technology Center, Bartlesville Project Office, Metairie Project Office, and Headquarters. Energy Efficiency submission should be provided in one exhibit as shown in Figure IV-4h.2. The Clean Coal Technology submission should be provided in the format shown in Figure IV-4h.3. Lastly, the Strategic Petroleum Reserve and Naval Petroleum Reserve submissions should use the format shown in Figure IV-4h.4. Questions on these special exhibits should be directed to the Nuclear and Fossil Energy Team (CR-14).

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY

STAFFING SUMMARY
Distribution of FTE's
Organization

	Full-Time Equivalents		
	FYPY Enacted	FYCY Enacted	FYBY Request
Control Technology & Coal Preparation			
Advanced Research & Technology Development			
Coal Liquefaction			
Combustion Systems			
Fuel Cells			
Heat Engines			
Magnetohydrodynamics			
Surface Coal Gasification			
Advanced Extraction and Process Technology			
Enhanced Oil Recovery			
Natural Gas Research			
Program Direction			
Fuels Program [1]			
TOTAL:	_____	_____	_____
Attrition Rate:	FYPY-2 _____%	FYCY-2 _____%	FYBY-2 _____%

[1] FTE's not counted against congressionally mandated floors
General note: Mandated floors have been proposed for repeal.

Figure IV-4h.1
Special Staffing Exhibit for:
FE R&D, FE R&D HQ, METC, PETC, BPO, MPO

DEPARTMENT OF ENERGY
FY BY CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION

STAFFING SUMMARY
Distribution of FTE's

	Full-Time Equivalents		
	FYPY Enacted	FYCY Enacted	FYBY Request
Energy Conservation			
Buildings Sector			
Industry Sector			
Transportation Sector			
Utility Sector			
Technical & Financial Assistance (Non-grants)			
Technical $ Financial Assistance (Grants)			
Policy and Management			
Subtotal, Headquarters	_____	_____	_____
Field Offices			
Albuquerque			
Chicago			
Golden			
Idaho			
Oak Ridge			
Richland			
San Francisco			
Savannah River			
Subtotal, Field Offices	_____	_____	_____
TOTAL, Energy Conservation	_____	_____	_____
Attrition Rate:	FYPY-2 _____%	FYCY-2 _____%	FYBY-2 _____%

Figure IV-4h.2
Energy Conservation Special Staffing Exhibit

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY

STAFFING SUMMARY
Distribution of FTE's
CLEAN COAL TECHNOLOGY

	Full-Time Equivalents		
	FYPY Enacted	FYCY Enacted	FYBY Request
Headquarters			
Morgantown			
Pittsburgh			
Total:	_____	_____	_____
Attrition Rate:	FYPY-2 _____%	FYCY-2 _____%	FYBY-2 _____%

Figure IV-4h.3
Clean Coal Special Staffing Exhibit

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY

STAFFING SUMMARY
Distribution of FTE's
(STRATEGIC PETROLEUM RESERVE or NAVAL PETROLEUM RESERVE)

	Full-Time Equivalents		
	FYPY Enacted	FYCY Enacted	FYBY Request

Attrition Rate: FYPY-2 _____% FYCY-2 _____%FYBY-2 _____%

General note: Mandated floors have been proposed for repeal

Figure IV-4h.4
Special Staffing Exhibit format for
SPRO or NPR

i. Technology Transfer. The National Competitiveness Technology Transfer Act of 1989 requires the Department to provide sufficient resources to support technology transfer activities at its laboratories and facilities. Therefore, in developing budget requests, please ensure that sufficient funds for technology transfer are provided. It is especially important to identify and explain those funds in your narrative justifications, i.e. in the Program Mission or Mission Supporting Goals & Objectives section of the Program Performance Summary. This includes funds for Administration and Oversight, and for Collaborations.

j. Small Business Innovation Research. Funding for the Small Business Innovation Research (SBIR) program is collected in accordance with Public Law (P.L.) 102-564, the Small Business Research and Development Enhancement Act of 1992. It was previously authorized under P.L. 97-219.

(1) The contributions to SBIR are based on a percentage tax of obligations. This tax is applied against all Departmental extramural research except research "solely for weapons activities or for naval reactor programs." Prior to FY 1993, all Atomic Energy Defense Activities were exempt from the program; now only the following programs are exempt: Weapons Research, Development, and Testing; Materials Production; Security Affairs; and Naval Reactor Programs.

(2) The Interior Congressional staff has requested that Fossil Energy (FE) R&D and Energy Conservation (CE) programs identify amounts that will be assessed against these programs for the Small Business Innovation Research (SBIR) program. The staff has requested that Fossil Energy include SBIR transfers in FE Program Direction and Management Support, and that Energy Conservation include SBIR in their Policy and Management program decision units. Other DOE R&D programs may appropriately identify estimated SBIR assessments in the budget justifications of the contributing programs.

(3) An automatic assessment process determines the amount of contribution. Annual assessment percentages will be provided in the Congressional Call. Actual amounts of SBIR transfers should be reported for FYPY and estimated amounts reported for FYCY

(4) The Office of Budget will continue preparing a SBIR summary for the Department that shows amounts transferred from each R&D account. Questions concerning SBIR should be directed to the indicated point of contact in the POC Matrix provided at the front of this chapter.

k. Historically Black Colleges and Universities. As a part of the Congressional budget process, Federal agencies are required to submit an estimate of funding for Historically Black Colleges and Universities. The Office of Minority Economic Impact (ED-4) will prepare a consolidated estimate for the Department based on program estimates submitted as part of the OMB process. No further action is required by organizations that have submitted estimates with their OMB request. Organizations that anticipate funding activities at Historically Black Colleges and Universities and have not yet provided this information should immediately contact the indicated point of contact in the Office of Minority Economic Impact (see the Point of Contact Matrix provided at the front of this chapter).

l. Major Items of Automated Data Processing Equipment (ADPE) Acquisitions. Congress requires agencies to identify and justify all new major items of ADPE in the appropriate budget narrative material (i.e., Capital Operating Expenses & Construction Summary) of the funding program.

(1) **Definition**. A major item of Automated Data Processing Equipment (ADPE) is defined as the acquisition of an ADPE component or group of ADPE components that has a purchase equivalent value of $2,000,000 or more. This threshold is irrespective of the actual method of acquiring equipment (purchase, lease, lease/purchase or any combination), the type of funding used, or whether annual lease costs are less than $2,000,000.

(a) For new items of computing resources, the purchase equivalent value is based upon listed, anticipated or actual purchase price.

(b) For used items of computing resources or re-utilization of DOE-reassigned, Government excess, or exchange/sale computing resources, the purchase equivalent value is based upon the current best estimate market value.

(2) **Identification and Justification in Program Budget Justifications**.

(a) All major items of ADPE must be separately identified and justified in the Capital Operating Expenses & Construction Summary of the funding or landlord program in Congressional budget submission.

(b) In cases where a single program proposes the acquisition of a major item of ADPE from operating funds, the total acquisition cost for each appropriate fiscal year must be shown by the funding program. In those cases where major items of ADPE are to be funded by multiple programs under operating funds, the total fiscal year acquisition costs must be shown by the landlord program, the DOE program having budget responsibility for general purpose equipment at that location. Where appropriate, however,

it should be noted that the actual costs will be shared programmatically according to a charge-back plan based upon use.

m. Administrative Support Costs. House Report 102-116 accompanying the FY 1992 Department of Interior and Related Agencies Appropriation Bill requires programs that are assessed for administrative expenses (i.e., computer timesharing and other housekeeping functions) to separately identify those costs in their budget submissions. This requirement applies to the Economic Regulatory Administration, Energy Information Administration, the Office of Hearing and Appeals, and the Interior funded portion of the Office of Intelligence and National Security (IS). These costs should be identified in Part III of the program Performance Summary. Questions regarding this requirement should be directed to the Conservation, Administration and Regulation Team (CR-14). See the Point of Contact Matrix provided at the front of this chapter for point of contact name and phone number.

5. CROSSCUT DOCUMENTS. Crosscut data is generally prepared at the specific request of the various subcommittees. Several of these are prepared on a recurring basis and are discussed below. Others are prepared only on a one-time basis to meet a specific and short-term need. These will be identified as the need arises in the call letter. Crosscut analyses will be prepared to consolidate related functions that are being funded within the Department of Energy in several different areas. While these analyses are prepared during previous phases of the budget process, it is necessary to update them to reflect final Presidential allowances. Any questions concerning the preparation and content of these tables should be directed to the appropriate point of contact as indicated in the Point of Contact (POC) Matrix provided at the front of this chapter.

   a. Environment, Safety and Health Crosscut. The Office of the Assistant Secretary of Environment, Safety and Health (EH) prepares FYBY Congressional ES&H crosscut which will be submitted with the Department's budget to Congress. This crosscut is developed by updating the ES&H Management Planning Database to reflect final OMB allowances. To aid EH in this endeavor, Headquarters organizations should review the OMB ES&H crosscut and, working with the affected Operations Offices, make necessary changes to the ES&H data to reflect final budget decisions.

      (1) All Headquarters organizations, except for the Office of the Assistant Secretary of Environmental Restoration and Waste Management (EM), should revise and update their ES&H Management Plan databases to reflect final budget decision funding levels of non-EM environmental activities/budgets and all safety and health activities/budgets.

      (2) EM should revise and update the ERWM Five-Year Plan database to reflect final budget decision funding levels of EM environmental activities/budgets and safety and health activities/budgets.

      (3) The above organizations should submit their respective revised database roll-up disks to EH at the same time as their budgets are due to the Office of Budget. The due date of the program budgets to the Office of Budget is indicated in the Congressional Call letter.

      (4) It is essential that all Headquarters organizations participate in this updating process because the Department's Congressional ES&H crosscut submittal is based directly on the contents of the programs' ES&H databases.

      (5) Also, Headquarters organizations should provide written feedback to the Operations(Ops) Offices concerning final budget decisions and any specific impacts of these decisions on the ES&H activities/budgets. The Ops Offices should then work with the appropriate organizations to ensure that the Ops Offices ES&H Plans reflect the final budget decisions.

b. Safeguards & Security (S&S) Crosscut.

(1) This section provides safeguards and security crosscut estimate reporting guidance for the Congressional budget process.

(2) The Office of Security Affairs will provide the program offices with a copy (under separate cover) of the Safeguards and Security Crosscut database for markup. Program offices are required to update their Office of Management and Budget crosscut requests to reflect changes based on decisions made in the OMB process. Programs must assure that their final markup is provided in accordance with the CFO's Calendar of Events in Attachment B of the annual Congressional Call.

(3) Please return the markups and any final Construction project data sheets to NN-513, Germantown. If changes are not required, please notify the above office in writing. Questions arising from the development of detailed S&S crosscut allocations should be directed to NN-513.

c. Information Management Crosscut. The CIO will provide the program offices a copy of the Information Management crosscut major items of equipment (MIE) table for markup to reflect final OMB funding allowances. A major item of equipment refers to acquisition of ADP or telecommunications equipment component or group of equipment components that has a purchase equivalent value of $2,000,000 or more. The determining threshold level for a major item of equipment is whether the purchase equivalent value is $2,000,000 or more, irrespective of the actual method of acquisition (purchase, lease, or lease/purchase combination) or the type of funding used. Thus, an item of leased equipment is an MIE if the purchase equivalent value is $2,000,000 or more even if the annual lease costs are less than $2,000,000. Programs must assure that their final markup is provided to the CIO the same time detailed budget justifications are due to the Office of Budget. Questions concerning the MIE table should be directed to the Plans and Acquisitions Team, Chief Information Officer.

d. EE and ER Solar and Renewable Programs Crosscut. The FY 1998 House Report on Energy and Water Development directed the Department to "submit a comprehensive research and development request for Fiscal Year 1999 which represents a new partnership between the Office of Energy Efficiency and Renewable Energy and the Office of Energy Research." In order to comply with this requirement the Department will submit a table which integrates the budget requests for the EE and ER organizations. The Offices of Energy Efficiency and Renewable Energy and Energy Research are requested to complete the table below and submit both in hard copy and electronically.

	FY 19PY Current Appropriation	FY 19CY Original Appropriation	FY 19BY Budget Request
Energy Supply Research and Development			
Solar and Renewable Energy			
Solar Energy			
Solar Building Technology Research			
Photovoltaic Energy Systems			
Photovoltaic Energy Research			
Subtotal, Photovoltaic			
Solar Thermal Energy Systems			
Biomass/Biofuels Energy Systems			
Power Systems			
Transportation			
Subtotal, Biomass/Biofuels Energy Systems			
Biomass/BioFuels Energy Research			
Subtotal, Biomass			
Wind Energy Systems			
Wind Energy Research			
Subtotal, Wind			
Renewable Energy Production Incentive Program			
International Solar Energy Program			
Solar Technology Transfer			
National Renewable Energy Laboratory			
Construction			
Subtotal, National Renewable Energy Laboratory			
Total, Solar Energy			

Figure IV-5d
EE and ER Solar and Renewable Program Crosscut

	FY 19PY Current Appropriation	FY 19CY Original Appropriation	FY 19BY Budget Request
Cont-			
Geothermal			
Geothermal Technology Development			
Hydrogen Research			
Hydrogen Energy Research			
Total, Hydrogen			
Hydropower Development			
Renewable Indian Energy Resources			
Electric Energy Systems and Storage			
Electric and Magnetic Fields R&D			
High Temperature Superconductivity R&D			
Energy Storage Systems			
Climate Challenge			
Total, Electric Energy Systems and Storage			
Program Direction			
Prior Year Balances			
Total, Solar and Renewable Energy			

Figure IV-5d
EE and ER Solar and Renewable Program Crosscut

6. ANCILLARY DOCUMENTS. In addition to the mainline and supplementary justification materials, the Congressional committees have historically requested several ancillary documents be prepared and submitted in conjunction with the printed justification. Following is a descriptive list of ancillary documents that are routinely submitted:

   a. Summary of Estimates by Appropriation. This table provides appropriated amounts for FYPY and FYCY, and requested budget authority for FYBY by appropriation. For the PY and CY, comparable and non-comparable amounts are shown. The summary of estimates by appropriation table is prepared by the Office of Budget and is included in the printed Congressional budget volumes. This table precedes the primary justification materials in each of the budget volumes. See Figure IV-6a for a sample page of this summary table.

Department of Energy
FY BY Congressional Budget

Summary of Estimates by Appropriation
Budget Authority
(Dollars in millions)

	FY PY		FY CY		FY BY Request to Congress
	Non-comp	Comp	Non-comp	Comp	
Appropriations Before the Energy and Water Development Subcommittees:					
Energy Supply Research and Development	$2,984.7	$3,002.4	$3,015.8	$3,044.9	$3,154.6
Uranium Supply and Enrichment Activities	-397.0	-397.0	-175.7	-175.7	160.0
UE Decontamination & Decommissioning Fund	----	----	----	----	286.3
General Science and Research Activities	1,458.8	1,458.8	1,417.8	1,417.8	1,599.1
Isotope Production and Distribution Fund	8.5	8.5	5.0	5.0	3.9
Atomic Energy Defense Activities					
Weapons Activities	4,660.2	4,660.2	4,570.4	4,570.4	3,771.0
Defense Environmental Restoration & Waste Mgmt	3,680.7	3,663.6	4,831.5	4,803.0	5,465.9
Materials Support & Other Defense Programs	3,627.1	3,629.9	2,616.8	2,619.5	2,164.0
Defense Nuclear Waste Disposal	----	----	100.0	100.0	120.0
Total, Atomic Energy Defense Activities	11,968.0	11,953.7	12,118.7	12,092.9	11,520.9
Departmental Administration	366.4	369.2	87.1	83.7	175.5
Office of Inspector General	33.0	26.8	30.4	30.4	31.8
Power Marketing Administration:					
Alaska Power Administration	3.2	3.2	3.6	3.6	4.0
Bonneville Power Administration	184.4	184.4	371.6	371.6	18.2
Southeastern Power Administration	23.9	23.9	32.4	32.4	29.7
Southwestern Power Administration	28.5	28.5	21.9	21.9	33.6
Western Area Power Administration	311.9	311.9	333.2	333.2	360.2
Total, Power Marketing Administrations	551.9	551.9	762.7	762.7	445.7
Federal Energy Regulatory Commission	----	----	----	----	-3.3
Nuclear Waste Disposal Fund	275.1	275.1	275.1	275.1	260.0
Total, Appropriations Before the Energy and Water Development Subcommittees	17,249.4	17,249.4	17,536.9	17,536.8	17,634.5

Figure IV-6a
Summary of Estimates by Appropriation
Energy and Water Development

b. Summary of Estimates by Major Activity. This table provides appropriated amounts for FYPY and FYCY, and requested budget authority for FYBY by major appropriation. For major activities under the jurisdiction of the Energy and Water Development subcommittee, the PY and CY columns show non-comparable amounts. For major activities under the jurisdiction of the Interior and Related Agencies subcommittee, the PY and CY columns show comparable amounts. The Office of Budget prepares the summary of estimates by major activity table for each appropriation and includes the table in the Congressional budget volumes. This table precedes the primary justification materials for each appropriation in the Congressional Budget Request volumes. See Figure IV-6b for a sample page of this summary table.

Department of Energy
FY BY Congressional Budget
Summary of Estimates by Major Activity
Energy Conservation
Budget Authority
(Dollars in millions)

	FY PY Comp	FY CY Comp	FY BY Request to Congress
Energy Conservation R&D			
Transportation Sector	$109.3	$167.9	$184.7
Industrial	96.7	112.8	137.1
Building Sector	47.1	59.7	98.4
Technical & Financial Assistance - Non-Grants	33.4	35.3	45.9
Policy and Management	2.7	3.6	4.9
Utility Sector	4.7	5.0	6.8
Total, Energy Conservation R&D	293.9	384.3	477.8
Technical and Financial Assistance - Grants	240.4	295.5	300.6
Use of Non-Appro. Escrow Funds (PODRA) in SLAP	-23.0	-15.4	-15.8
Total, Energy Conservation	$511.3	$563.63	$762.6

Figure IV-6b
Summary of Estimates by Major Activity
Interior and Related Agencies

c. Control and Statistical Tables. The Budget Formulation Team (CR-13) is responsible for maintaining a system to track budget funding data throughout the annual budget process. This Team prepares budget authority tables showing appropriated amounts for the PY and CY, and requested appropriations for the BY. There are two primary types of budget authority tables: the statistical table and the control table. Both of these tables are submitted to Congress concurrently with the printed budget justification.

(1) **Statistical Table**. This table shows budget authority data at the Congressional control level of detail which is by appropriation by decision units by expense type (i.e., operating expense and construction projects). PY and CY year data in this table reflects appropriated amounts including adjustments for Congressionally approved reprogrammings, enacted rescissions and/or supplementals. General reductions are spread above the line to lowest level of detail possible. Backouts for use of unobligated balances are shown as bottom-line adjustments to each account. Supplementals, budget amendments, and rescissions which are pending before Congress are be shown above the line at the lowest level of detail possible, and then backed out again as a bottom-line adjustment to the account.

(2) **Control Table**. This table summarizes the same data as the statistical table but not at the same level of detail since the control table only shows budget authority amounts by appropriation by decision unit. The budget justification materials sent to Congress in support of the President's budget must tie to the numbers in the control table.

d. Outlay Table. CR-13 prepares Departmental outlay tables that show actual outlays for the prior year and estimated outlays for the current and budget years. This table shows outlays by organization within each appropriation account. This table is used by Office of budget in preparing the Department's portion of the President's Budget.

e. Base Table. This table issued by the Budget Execution Team (CR-13) provides control numbers for CY obligations. These numbers are adjusted by any anticipated end of year balances carried in the President's budget appendix and excludes reimbursable obligations. This table is submitted to Congress quarterly.

f. Budget History Table. This table reflects FYBY funding levels at the control table level of detail at major stages of progression during the Department's annual budget cycle. These major stages are: Departmental Organizations request during the Corporate Review Process (i.e., PPL), the Department's request to OMB (i.e., OMB budget request), and the Department's request Congress (i.e., Congressional budget request). The budget history table is prepared by the Budget Formulation Team (CR-13) and is developed by appropriation by decision unit. This table is submitted to Congress concurrently with the printed Congressional budget volumes.

g. State Table. In compliance with a standing Congressional requirement, the Department prepares and submits concurrently with the budget justification materials, a funding by state analysis. This report provides PY final adjusted appropriations, CY current adjusted appropriations and BY requested appropriations by state, appropriation, program, and decision unit. This report is produced by the Office of Budget using the Program Funding By Contractor & Location System **and must tie directly to the Control Table issued by the Office of Budget**. The report is prepared according to the program structure attached to the annual Congressional Call. Appropriations are reported in the state or territory in which the production or research and development (R&D) contractor is physically located. Items or services procured for production or R&D activities are reported in the state in which the contractor using the items or services is physically located. A sample page of the State Table is shown in Figure IV-6g.

DEPARTMENT OF ENERGY
FYBY CONGRESSIONAL BUDGET
STATE TABLE

mm/dd/yy
PAGE: #

(IN THOUSANDS)

ALABAMA	FYPY ADJUSTED	FYCY ADJUSTED	FYBY REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT			
Energy Research			
Biological and Environmental Research	190	195	205
Fusion Energy	500	550	608
Basic Energy Sciences	10,000	10,505	505
TOTAL Energy Research	10,690	11,250	1,318
TOTAL ENERGY SUPPLY RESEARCH AND DEVELOPMENT	10,690	11,250	1,318
GENERAL SCIENCE AND RESEARCH			
Basic Sciences			
High Energy Physics	366	366	366
Nuclear Physics	95	95	97
TOTAL Basic Sciences	461	461	463
TOTAL GENERAL SCIENCE AND RESEARCH	461	461	463
DEPARTMENTAL ADMINISTRATION			
Policy and Management			
Administration & Management	16	16	16
TOTAL DEPARTMENTAL ADMINISTRATION	16	16	16
SOUTHEASTER POWER ADMINISTRATION - OP.& MAINT.			
Power Marketing			
Southeastern Power Administration	5,124	6,759	12,313
TOTAL SOUTHEASTERN POWER ADMINISTRATION - OP.& MAINT.	5,124	6,759	12,313
FOSSIL ENERGY RESEARCH AND DEVELOPMENT			
Coal			
Control Technology and Coal Preparation	6,500	7,533	11,085
Combustion Systems	8,000	9,500	16,000
TOTAL Coal	14,500	17,033	27,085
TOTAL FOSSIL ENERGY RESEARCH AND DEVELOPMENT	14,500	17,033	27,085
ENERGY CONSERVATION			
Technical and Financial Assistance			
Grants	3,100	3,120	3,102
TOTAL ENERGY CONSERVATION	3,100	3,120	3,102
TOTAL ALABAMA	33,891	38,639	44,297

Figure IV-6g
State Table

h. Laboratory Table. Each year the Department is required to furnish an analysis of its budget year request by laboratory, plant or other installation (LPI). This report is coordinated and developed by the Office of Budget using the Program Funding by Contractor & Location System. This report provides PY final adjusted appropriations, CY current adjusted appropriations and BY requested appropriations by LPI, appropriation, program, and decision unit. **These amounts must tie directly to the Control Table issued by the Office of Budget**. Each LPI represents the location where funds are expected to be spent. Amounts shown are in thousand of dollars. Stub entries on the report show the total amount assigned that activity (i.e., the sum of operating expenses and construction). Major laboratories are listed alphabetically. A sample page of this report is shown in Figure IV-6h.

(IN THOUSANDS)

STANFORD LINEAR ACCELERATOR CENTER	FYPY ADJUSTED	FYCY ADJUSTED	FYBY REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT			
Energy Research			
Biological and Environmental Research	4,151	4,151	3,050
Fusion Energy	50	50	50
Basic Energy Sciences	15,620	15,620	16,075
University & Science Education	100	115	0
ER Laboratory	400	500	500
TOTAL Energy Research	20,321	20,436	19,675
Energy Applications			
In-House Energy Management	250	260	410
Environmental Restoration and Waste Management			
Environmental Restoration	85	94	1,225
Waste Management	2,000	3,103	6,535
TOTAL Environmental Restoration and Waste Management	2,085	3,197	7,760
TOTAL ENERGY SUPPLY RESEARCH AND DEVELOPMENT	22,656	23,893	27,845
GENERAL SCIENCE AND RESEARCH			
Basic Sciences			
High Energy Physics	135,125	138,285	122,594
Nuclear Physics	30	30	0
TOTAL Basic Sciences	135,155	138,315	122,594
TOTAL GENERAL SCIENCE AND RESEARCH	135,155	138,315	122,594
DEFENSE ENVIRONMENTAL RESTORATION & WASTE MANAGEMENT			
Defense Environmental Restoration & Waste Management			
Waste Management	100	200	0
TOTAL DEFENSE ENVIRONMENTAL RESTORATION & WASTE MGMT	100	200	0
TOTAL STANFORD LINEAR ACCELERATOR CENTER	157,911	162,408	150,439

Figure IV-6h
Lab Table